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The top 10 Palm applications that you, the power user, must have. Page 64

Y2K: NOT DEAD YET

William Ulrich says hard numbers indicate that we're still not ready to roll over. Page 32

POSNER POWER

Legal experts say Judge Richard Posner's appointment to mediate the Microsoft suit may be the best chance for settlement. Page 4

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OSHA PROPOSAL REQUIRES IT ACTION

Says IT must help ease repetitive stress

BY LINDA ROSENCRANCE

The federal ergonomics standard proposed last week will require corporate information technology managers to pay more attention to workstation design, employee training and responses to worker complaints of repetitive stress injuries.

The federal Occupational Safety and Health Administration issued a proposal that require employers to protect employees by correcting workplace conditions that could cause repetitive stress injuries such as carpal tunnel syndrome, back or neck injuries and tendinitis.

OSHA's proposal will present a lot of challenges for IT professionals, who will have to pay attention to how a person interacts with hardware and software, said Hank Austin, manager of safety and environmental affairs at USAA in San Antonio.

For example, he said, software developers will have to make sure end users don't have to perform "keyboard aerobics" to get the results they want from the software.

"From a business perspective, you have to think about the effect of new hardware on the user," he said. "For example, are there vision issues? Is the monitor set up too high or too low? . . . Does the user have

OSHA, page 16

SIM SEEKS TO QUASH PENDING LEGISLATION

User group to fight states' adoption of plan that gives vendors power to disable apps

BY PATRICK THIBODEAU

The Society for Information Management — the big user group of information technology executives — is on the verge of launching a state-by-state battle to defeat a proposed law that it fears will give software vendors tremendous power.

But time is short.

The pending Uniform Computer Information Transaction Act — a model commercial code covering a broad range of software licensing issues — has already been submitted to the 50 state legislatures for adoption.

"Anybody that uses software to run their mission-critical businesses — which is everybody, basically — is very concerned about it," said Randy Roth, one of the leaders of the SIM lobbying effort and director of corporate purchasing at Principal Financial Group in Des Moines, Iowa.

But the 2,700-member SIM faces a daunting task in stopping UCITA.

Technically, UCITA must be adopted in all 50 states to become the law of the land. But its adoption by only one or

SIM, page 16

STUDENTS NIXING MBA FOR DOT-COM

Wharton deferrals show lure of start-ups

BY JULEKHA DASH

This fall, it was anything but business as usual at the University of Pennsylvania's Wharton School of Business. About 25 of the school's 765 business students chose to join Internet start-ups rather than return for their second year — a 400% increase in the usual dropout rate, according to school officials.

One of those students was Curtiss Barnes, who works as product development director at Campus Pipeline Inc., a networking company that connects universities with academic resources. Barnes, who left

> I wanted to . . . say to my kids 20 years from now that I was part of the Internet revolution.
>
> CURTISS BARNES, CAMPUS PIPELINE INC.

MBAs, page 77

SURVIVING A MERGER

THERE'S CONSTANT THUNDER from huge mergers and acquisitions that send shock waves through corporate IT departments. Fears of layoffs and systems integration hassles are the norm. This week, *Computerworld* provides a survival guide full of tips on how to fuse those mammoth enterprise resource planning systems, as well as how to keep your IT career alive on the other side of a merger. And columnist Jim Champy (page 42) offers five strategic recommendations on how to avoid the typical IT pitfalls in a merged company.

Special Report starts on page 44.

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SECURITY CONSCIOUS

CDNow's Michael Krupit worries about piracy. But financiers fret about data integrity. Identifying your prime concern can help keep things locked up. Page 38

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"OSHA HAS WRITTEN A BLANK CHECK ON THE BACKS OF AMERICAN WORKERS AND THEIR EMPLOYERS."

RANDEL JOHNSON, VICE PRESIDENT, U.S. CHAMBER OF COMMERCE IN WASHINGTON, THREATENING LEGAL ACTION IF OSHA PURSUES REGULATIONS THAT COULD FORCE BUSINESSES TO PROVIDE MORE ERGONOMIC EQUIPMENT AND TRAINING TO WORKERS. SEE PAGE 08.

AT DEADLINE

Compaq Takes Hit

Compaq Computer Corp.'s decision earlier this year to discontinue Windows NT on its Alpha servers will cost the company up to $100 million in the fourth quarter and an additional $100 million to $150 million in the first quarter of next year, according to a filing with the U.S. Securities and Exchange Commission. The charges will cover costs associated with the trade-in programs and migration services for users who have already purchased Windows NT-based Alpha servers.

Net Complaints Up

Consumer complaints about Internet scams rose 39% in 1998 – up 23% from a year earlier, according to the eighth annual survey by the National Association of Consumer Agency Administrators. The most common types of Internet complaints involved Internet service providers, merchandise ordered over the Internet and online auctions, officials said.

Dell Loses Connection

Dell Computer Corp.'s Web site was unavailable to some users around the world for several hours last Tuesday because of a problem in the network interface connecting Dell's site to Internet service providers. The problem was corrected within a few hours, a Dell spokesman said.

Retailer to Use Linux

Autozone Inc., a Memphis-based chain of auto parts stores, will deploy 3,000 intranet terminals running Red Hat Linux, in one of the larger corporate implementations of client-side Linux to date. The company is using consulting services from Research Triangle Park, N.C.-based Red Hat Inc.

Windows Extensions

Microsoft Corp. last week announced extensions for Windows 9x and Windows NT 4.0 Workstation. The extensions enable the operating systems to take advantage of certain features of Windows 2000's Active Directory. The company said the extensions will allow users to roll out Windows 2000 incrementally.

Mediator Could Prod Microsoft, DOJ to Settle

Legal experts say Posner could get sides to see outcomes of case if appeals drag on

BY DAVID ORENSTEIN

MICROSOFT Corp. and government lawyers are more likely to settle their antitrust case with Judge Richard A. Posner as a mediator than they would be without such a well-respected guide, several legal experts said.

Judge Thomas Penfield Jackson 10 days ago appointed Posner, the chief judge of the 7th U.S. Circuit Court of Appeals in Chicago, to the role of mediator between Microsoft on one side and the U.S. Department of Justice and 19 state attorneys general oo the other. Posner is revered by experts as a major contributor to the influential "Chicago School" of antitrust law, which applies economic analysis to antitrust cases and makes consumer interests the priority over the interests of competing companies.

"He certainly is one of the five or 10 most important people in the country in the area of antitrust," said Michael Jacobs, a law professor at the DePaul University College of Law in Chicago. "The odds of a settlement have improved dramatically."

Microsoft and the DOJ both praised Posner when his appointment was announced.

"The prospects of a settlement before this were dim," said Mark Schechter, an attorney at Howrey & Simon in Washington and a former DOJ lawyer who participated in earlier prosecutions of Microsoft. With Posner, the parties have a golden opportunity to talk to one of the people best able to foresee the future of the case — for both sides — if the issues end up going through an appeals process, Schechter said.

While experts agreed that Posner's wisdom will command respect, they debated whether his conservative ideology will also become a factor in the mediation. Some experts said Posner will serve merely as an objective facilitator, but others hinted that his preference for unfettered market economics over government regulation could help him win the trust of Microsoft, which received a lashing in Jackson's Nov. 5 findings of fact.

As a mediator, experts agreed, Posner will abide fully by Jackson's findings; he can't actually rule on anything. But Randal Picker, a law professor at the University of Chicago and a former clerk for Posner, said the judge might be able to instruct Microsoft and the government about why Microsoft may still have a viable appeal based oo legal thinking that emphasizes the case's impact oo consumers. Microsoft's harm to Netscape seemed clearer in Jackson's opinion than its harm to consumers, Picker said.

Christopher B. Hockett, a lawyer at McCutchen, Doyle, Brown & Enersen LLP, agreed, saying that Posner "might be sympathetic to arguments that Microsoft would be making." Hockett serves oo the council of the American Bar Association's antitrust section. His firm lists Microsoft as a client.

Many users have said they would prefer to see a settlement rather than a prolonged war that produces uncertainty. "I think this is the best thing for everybody," said James Fey, director of advanced technology at PMI Mortgage Insurance Co. in San Francisco.

Judge Richard A. Posner

Posner helped found the "Chicago School" of antitrust law, which applies economic analysis to the law and makes harm to the consumer the central issue in cases. Posner's heralded credentials, experts said, are what give him tremendous authority to bring about a settlement.

Born: Jan. 11, 1939
Undergraduate: Yale 1959 (summa cum laude)
Law school: Harvard 1962 (1st in class)
First job: Law clerk for U.S. Supreme Court Justice William Brennan
Professor: University of Chicago (1969 to present)
Judge: 7th U.S. Circuit Court of Appeals (1981 to present); chief judge since 1993

Microsoft Faces More Private Lawsuits

But corporate users don't plan to join the lawsuit parade

BY DAVID ORENSTEIN AND DOMINIQUE DECKMYN

Angry California consumers last week saddled Microsoft Corp. with another private lawsuit alleging that the company overcharges for Windows. But corporate users wereo't sympathetic to the mounting claims.

The suit, filed in San Francisco by Lillian R. Lea of Alameda, Calif., and Tortola Restaurants LLP in San Francisco, seeks class-action status, just like suits filed in Alabama, New York and Louisiana the previous week [News, Nov. 22]. It was followed Tuesday by another suit, filed in Ohio.

They're all inspired by U.S. District Judge Thomas Penfield Jackoo's Nov. 5 "findings of fact" in the federal antitrust case that Microsoft is a monopoly that could set any price it wants for Windows.

"Prices of Windows . . . have been raised, fixed, maintained and stabilized at artificial and ooncompetitive levels," the San Francisco lawsuit alleges.

Microsoft didn't return a call seeking comment last week, but the company previously dismissed the three other suits as "baseless [and] groundless."

Corporate technology managers said they aren't preparing to flock to court over Windows prices.

Bill Nicholson, informatioo systems director at Catellus Development Corp. in San Francisco, said his real estate development company wouldn't join litigation against Microsoft over prices or other topics.

But he said Microsoft either overcharges or underdelivers: "My issue with Microsoft is that their products just doo't meet the quality standards they are supposed to."

Users in the New York Windows NT/2000 Users Group aren't irked by Windows pricing, said Chairman Bill Zack, who is also a Windows NT consultant in Fairfield, Conn. On the server side, Windows competes with more costly versions of the Unix operating system, he said.

Whether or not Microsoft charges too much, the growing group of plaintiffs can't yet rely on Jackson's findings of fact as evidence, said Lisa Wood, an antitrust attorney at Nutter, McClennen & Fish LLP in Boston. Only after the findings of fact are part of a final ruling that withstands appeals can they be used as evidence in the consumer lawsuits.

If Microsoft were to settle the antitrust case, Wood said, it could squelch Jacksoo's findings.

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GM Strikes Deal to Outsource Accounting

Revenue, not just savings, involved as Arthur Andersen buys its best practices

BY LEE COPELAND
CHICAGO

THE WORLD'S biggest automaker wants to focus on cars and not on tediously complex tasks like payroll. That's why General Motors Corp. has struck a $250 million deal with Arthur Andersen to off-load many of its administrative accounting duties and accompanying software.

"To a large extent, this decision was technology-driven," said Matt Cullen, general manager of GM's Enterprise Activities Group. "It became clear, because the technology evolves so quickly, that a one-time investment in technology would not allow us to be competitive long term."

Arthur Andersen will assist GM in transitioning from its legacy payroll system to PeopleSoft Inc.'s human resources software.

GM, based in Detroit, employs approximately 500 people to handle the now-outsourced administrative functions. One-fifth of those employees will stay with GM to manage the new outsource relationship. The remaining 400 employees have the option of working for Arthur Andersen, based here, at a service center focused on GM's business. The center's location hasn't been determined.

JUST THE FACTS

GM-Andersen Partnership

- $250M over 10 years
- Arthur Andersen to take over GM's payroll, dealer billing, accounts receivable and payable, fixed asset accounting, and travel and expense transactions
- GM estimates that it processes $250B of financial transactions each year
- Both companies will market accounting services to new customers

"There's not much sacred in the corporate world anymore, and if certain functions are not core to a business, they outsource to the lowest bidder," said Dennis Virag, an analyst at Automotive Consulting Group Inc. in Ann Arbor, Mich. "Administrative functions are not rocket science, but more process-oriented. And one would think over time administrative systems such as payroll have been perfected to the point where there's no fat left."

GM couldn't concur more. Doling out paychecks to 265,000 North American employees is an arduous task. It wants to utilize Web technologies to a significant degree going forward.

"Payroll processing has been around for donkey's years, but as the Internet gets into the middle of things, it becomes easier to do integrated billing across a bunch of services," said Gopi Bala, an analyst at The Yankee Group in Boston.

But unlike typical outsourcing contracts, GM expects to reap revenue gains as well as save money in the deal. That's because the deal also involves revenue sharing by the two companies, as Arthur Andersen markets services based on the newly acquired best practices from GM. According to Cullen, Arthur Andersen paid its new employer for those intellectual and hard assets relating to how the $161 billion company processes its back-office functions.

"This is not a classic interpretation of outsourcing by any means," Cullen added.

Arthur Andersen, which reported revenue of $7 billion last year, hopes to grow its outsourcing wing to a $1 billion business, targeting big firms like GM and rapid growth dot-com and high-tech firms with Web-enabled finance and accounting applications, said Tom White, Andersen's global managing partner for business process outsourcing.

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Online Trading Reports Have Bark, Not Bite

Regulators stop short of rule-making

BY THOMAS HOFFMAN

Two regulatory agencies last week published reports that outline some of the problems that plague online investors, but the reports fell short of recommending ways to fix those problems.

Still, experts believe that regulators will begin introducing rules to more closely monitor online brokerages and alternative trading networks beginning early next year.

The problems cited in the reports include frequent outages to online brokerages and a general lack of educational information (see chart).

But the studies, released by the Securities and Exchange Commission in Washington and the New York Attorney General's Office, don't recommend new rules to monitor the fast-growing industry.

The studies were the result of several months of investigations by both agencies into the practices of online brokerages.

Recommendations for Online Trading
SEC suggestions for New York to improve problems with online stock trading include:

Execution: Require online brokers to explain in "plain English" how they handle order flow and in which market centers customers can receive the fastest execution

Online forums: SEC should research the effects of chat room discussions on stock prices

Systems capacity: Online brokerages should maintain and periodically test contingency plans, as well as maintain records of significant systems outages

SOURCE: SECURITIES AND EXCHANGE COMMISSION, WASHINGTON

The online trading market has exploded since its birth in 1997. Online brokerages like Charles Schwab & Co. hold $415 billion in assets today, and that figure is expected to grow more than sevenfold to $3 trillion by 2003, according to industry experts.

SEC Commissioner Laura Unger, who wrote the 95-page SEC report, recommends in the report that the agency consider drafting requirements that would force online brokerages to regularly test the reliability of their trading systems and maintain records of systems outages.

But Unger stops short of recommending new rules to monitor online brokerages, because "it may still be premature" to enact extensive rule-making in this area, even though the industry has been growing by leaps and bounds for the past three years.

Stuart J. Kaswell, general counsel for the Securities Industry Association, a trade association representing more than 740 securities firms in Washington, agreed with Unger's approach, saying her call for restraint on new rules "is correct."

Still, industry experts predicted that rules will emerge. Bob Iati, an analyst at TowerGroup in Needham, Mass., said he believes that by the spring of 2000, the SEC will impose standards for how and whether online brokerages compensate Web sites such as Yahoo that drive customer traffic to their trading sites.

Iati also predicted that by the middle of next year, the SEC will require online brokerages to regularly test their online trading systems.

Less clear in the reports are what recommendations, if any, might be made regarding electronic communications networks such as those of Instinet Corp. and Archipelago LLC in Chicago, which now handle 30% of the trading volume over the Nasdaq Stock Market Inc.

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For *Computerworld* coverage of online trading and related Web pages, visit our Web site.
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IBM Pushes To Extend PC Life Cycle

BY DOMINIQUE DECKMYN

IBM announced last week that it would make it easier for customers to buy spare parts for IBM servers and desktop and laptop PCs years after the devices have been taken off the market.

The company typically keeps parts available for three years after it stops selling a particular model, said Bob Galush, director of Options Business Line Management at IBM's Personal Systems Group. However, under the new Options Continuation Program, IBM customers will be able to order parts online for an additional 18 months from IBM partners Go Corp. in Reno, Nev., and I.T. Xchange in Raleigh, N.C.

This will help customers upgrade older models and redeploy them in new roles, said Galush.

"I think it's a good idea," said Jim Ranager, a senior systems administrator at State Fire Academy of Mississippi in Jackson. "I've got some systems that are performing a useful function that date back to 1988 or 1989." But Ranager added that he tends to replace rather than repair older machines when they show problems.

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BRIEFS

Hotels' Y2K Tab

The U.S. lodging industry has spent $1.1 billion to date and will spend another $100 million by year's end on the year 2000 bug, according to PricewaterhouseCoopers in New York. The price tag is 1.2% of 1999 lodging industry revenues. Officials said the cost includes elevators, refrigerators, fire safety systems and reservation and telephone systems.

If the Shoe Fits

Nike Inc. in Beaverton, Ore., is bringing mass customization online by allowing Internet shoppers to personalize their sneakers. The NikeID feature lets customers add touches such as a nickname. The shoes arrive in two to three weeks and, at $80 to $85, cost $10 more than regular shoes. Nike will accept only 400 orders per day.

Schwab Retools Site

Charles Schwab & Co. in San Francisco announced enhancements to its online desktop trading system to give Web-based investors faster site access and new features, including options trading and portfolio tools.

Microsoft Locks Out Its Own Users

A flawed upgrade to Microsoft Corp.'s Java Virtual Machine that permits access to Web sites with Java reportedly locked Windows 98 users out of the Windows Update site last week. The Windows Update Web site provides bug fixes and software updates that can be critical if a business wants to swiftly patch a hole. It's not clear whether the software bug is located in Internet Explorer for Windows 95 or Windows 98. The company said a patch for the glitch is now available at www.microsoft.com/security/bulletins/ms99-043.asp.

Novell Profits Up

Novell Inc.'s profits nearly doubled during the fiscal year ended Oct. 31. On revenue of $1.27 billion, the company showed a profit of $180.7 million, compared with a profit of $102 million the year before. Revenue jumped 17% from the year before.

E-Retailers Try Promos To Boost Holiday Sales

Free shipping, limited-time coupons seen as most effective incentives

BY CAROL SLIWA

BUY THREE or more items at CDNow Inc.'s Web site during the holidays and get free shipping. Spend more than $100 online at the Eddie Bauer Inc. site and get free shipping.

With the holiday season in full swing, scores of electronic retailers are launching promotions not only to draw traffic to their sites but also to try to convert shoppers into buyers.

Computerworld's sampling of electronic retailers shows that several are increasing holiday promotional efforts, primarily through free-shipping offers and limited-time coupons.

Those are two of the most effective promotions, according to a July report from New York-based Jupiter Communications Inc.

"This is really the first holiday season where we're focused on kicking up online sales," said Mary Parish, vice president of e-commerce at Spencer Gifts Inc. in Egg Harbor Township, N.J.

The electronic retailer just completed a free-shipping promotion to encourage early shopping and plans to offer free gift wrapping and, later, a free gift with purchases.

Numbers Growing

Holiday promotions should make a significant impact this year. In a report released last week, Boston Consulting Group Inc. estimated that 23 million people will shop online this holiday season, compared with 7 million last year. Company consultant Nina Abdelmessih estimated 40% to 50% of those people will make their first Internet purchases.

"There's no question that with new users, they'll tend to go to a number of different sites before that first purchase is made, so you want to make a very strong first impression and establish a relationship that will stick over time. A promotion is one lever you can pull," Abdelmessih said.

Of more than 6,000 online shoppers Boston Consulting Group surveyed, 95% indicated that free shipping would inspire them to buy more.

Yet Jupiter's July report said e-commerce sites are underutilizing free-shipping promotions. Only 24% of the 29 companies surveyed offered free delivery. By contrast, 76% offered sweepstakes, even though only 24% of the 524 consumers surveyed said a sweepstakes compelled them to make their first online purchase (see chart).

But a sweepstakes can be helpful for an online-only company trying to build a successful business.

GiftCertificates.com said its $10,000 shopping spree sweepstakes, which ended Nov. 4, didn't generate many purchases. But the New York-based company, which sells gift certificates for more than 200 merchants, saw the promotion drive traffic that helped the company establish a direct marketing list.

More than 600,000 people visited the promotion page and 200,000 registered to receive marketing messages, said Maxwell Bardon, GiftCertificates.com's vice president of sales and marketing.

His company quickly tried to capitalize, sending out $10 "super certificates" that could be used toward a purchase of $25 or more. Although only 5,000 to 7,000 orders resulted, the company hopes to see a bigger payback during the holidays.

"Direct e-marketing is less expensive than driving people with banner advertising dollars, providing the people want to hear from you," Bardon said.

Follow-Up

"Offering an aggressive promotion is not enough," said Jupiter analyst Mike May. "It has to be followed up with excellent customer service and an ongoing knowledge of the customers so merchants don't continue to promote the same offer to the same customer," May said, noting that many companies don't track the effectiveness of their promotions.

Barnesandnoble.com is leveraging its bricks-and-mortar operation to try to generate online sales. The company is distributing more than 9 million bags with online discount coupons imprinted with code numbers.

"This is a learning process for all electronic-commerce companies, and we've been identifying which programs are more successful," said Barnesandnoble.com Senior Vice President Carl Rosendorf.

Which Online Promotions Work?

Performance of various promotion types for online retailers:

PROMOTION	% PEOPLE COMPELLED TO MAKE FIRST PURCHASE	% OF MERCHANTS WHO OFFERED
Free shipping	58%	24%
Limited-time discount	35%	60%
Free gift with purchase	33%	16%
Coupon	32%	22%
Sweepstakes	24%	76%

Base: Survey of 524 consumers and 29 e-commerce sites

SOURCE: JUPITER COMMUNICATIONS INC., NEW YORK

Gift Certificate Sales on Rise

Electronic gift certificates that can be redeemed instantly over the Internet could take hold in a bigger way this holiday season.

C/Base Inc. in Conshohocken, Pa., recently landed Microsoft Corp.'s online network as a customer and claims that at least a dozen shopping sites will launch its ecount gift certificate technology during the holiday season.

Those receiving ecount-backed gift certificates can redeem them on any Internet site because they're backed by financial institutions. And if the recipient wants to make a purchase that totals more than the certificate's amount, funds can be added at the point of sale with a credit card, said C/Base President Matt Gillin.

"We had a ton of traffic last Christmas Day. People are using it as a great last-minute gift," said Gillin, whose company operates its own site, Webcertificate.com, which he expects will service more than 1 million account this holiday season.

Many online retailers elect to develop their own gift certificate systems. Eddie Bauer in Redmond, Wash., next month plans to launch its new, instantly redeemable trichannel gift certificate. In the past, Eddie Bauer mailed its gift certificates. Now, customers will be able to get them via e-mail and redeem them online or through the company's catalog system or print them out for redemption in any of the company's more than 500 North American stores, said Mark Staudinger, vice president of interactive media at Eddie Bauer.

For customers who want more flexibility, there are aggregator sites such as GiftCertificates.com that sell certificates that can be redeemed at more than 200 merchants. The New York-based company's gift certificates, however, aren't electronic. They're mailed to recipients in special packaging. – *Carol Sliwa*

MORE ONLINE

For organizations, publications, stories and other resources related to retail technology, visit our Web site.

www.computerworld.com/more

Users Wince at Cost of MCI WorldCom's Frame Backup

BY JAMES COPE

MCI WorldCom Inc.'s strategy for warding off frame-relay failures like the one that blindsided thousands of users in August isn't soothing some customers.

Users said MCI WorldCom's backup plan of building a new network next year and asking customers to pay for it as a redundant service is like rubbing salt into an open wound.

"Why would I spend additional money for a redundant network when the other one isn't working right?" said Glenn Seidman, director of technical services at Complus Data Innovations Inc. in Hawthorne, N.Y., one of 3,000 MCI WorldCom customers affected by frame-relay outages.

Seidman said Complus' data lines were knocked out for at least 10 days in August and it experienced another brief outage just a couple of weeks ago.

He noted that a redundant frame would necessarily cost the customer more. What he said he doesn't understand is how MCI WorldCom could present its plan so soon after a network failure and claim it would cost 30% less than the primary service — or what is really a 70% add-on to what the customer pays for unreliable basic MCI WorldCom frame services.

Richard Myers, a spokesman at the Chicago Board of Trade (CBOT), where the electronic trading system was dark for nearly two weeks in August, echoed Seidman's take on MCI WorldCom's pricing. "I could look at this as a 70% price increase," he said. "You're putting the cost back on the user."

Added Service

David Natho, MCI WorldCom's director of frame-relay product marketing, denied that customers were being asked to pay for an additional service to assure reliability and suggested that additional cost for backup services should be expected. He said the option of having a separate and redundant frame-relay system is a disaster-recovery element in his company's network assurance program and redundancy is an additional service over and above the primary service.

Lisa Pierce, an analyst at Giga Information Group Inc. in Cambridge, Mass., noted that not all customers will want redundant frame-relay services.

But "some companies, especially those in the financial services industry, absolutely demand redundancy," she said.

Mark Bromley, vice president of electronic trading at CBOT, said he was aware of MCI WorldCom's plan for redundant services but the telecommunications firm had yet to contact him about it.

Natho said MCI WorldCom announced the backup program two weeks ago and there hadn't been time to effectively explain it to all customers.

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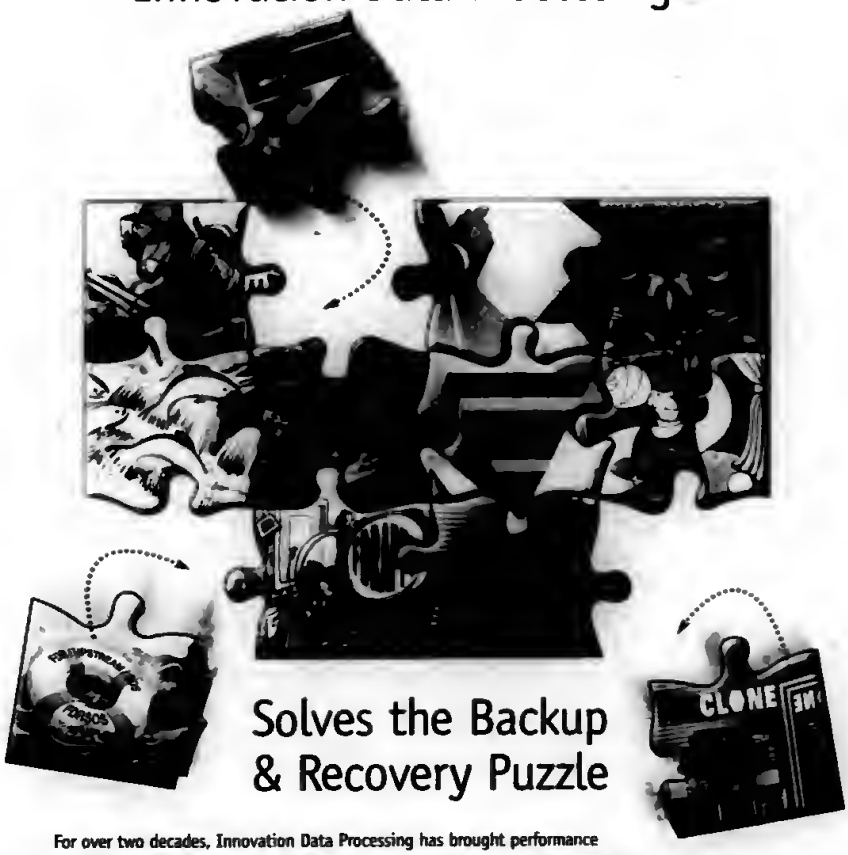

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KeyCorp Moves to Outsource

BY CRAIG STEDMAN

Cleveland-based KeyCorp, the nation's 12th-largest bank, last week announced restructuring moves that include software write-offs and a plan to increase technology outsourcing.

KeyCorp said it will take a fourth-quarter charge of up to $180 million to pay for the restructuring, which includes an 11% workforce reduction that will eliminate 3,000 jobs by the end of next year. The changes aim to give the $83 billion bank a $170 million boost in annual pretax earnings by 2002.

The bank began outsourcing in September when it announced a three-year deal valued at $20 million with Buffalo, N.Y.-based Computer Task Group Inc., which will manage several back-office applications for the bank's retail operations in western New York. A spokesman said KeyCorp now plans to look for outsourcing arrangements on a wider scale.

Meanwhile, the bank plans to write off about $37 million worth of software it said is no longer being used. Examples include packaged Internet banking software replaced by a custom application last month and mainframe programs made obsolete by a new Web-based cash management system for corporate customers.

KeyCorp's earnings rose 15% in the first nine months of the year, reaching $843 million. But executives at the bank view it only as "a moderately well-performing enterprise now," the spokesman said.

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> There are real pressures to deliver extraordinary results.
>
> GEORGE KIVEL, CONSULTANT, MAINSPRING COMMUNICATIONS

Competitive forces are mandating these kinds of restructuring moves by banks and other financial services firms, said George Kivel, a consultant at Mainspring Communications Inc. in Cambridge, Mass.

"There are real pressures to deliver extraordinary [financial] results, and they're realizing that's not going to happen if they take a business-as-usual approach," Kivel said.

But a big question is whether KeyCorp will use the expected savings to beef up its investments in new ventures, such as a business-to-business e-commerce site launched last summer, so it can "stop the continuing need for this sort of action," he added.

Earlier this month, insurer The Allstate Corp. in Northbrook, Ill., announced a $600 million expense-reduction program that it said is partly aimed at freeing up more money to invest in doing business online and in new call centers.

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College ERP Success May Take Custom Fit

Texas gets better results than Cleveland State

BY CRAIG STEDMAN

EARLY ADOPTERS of PeopleSoft Inc.'s applications for colleges and universities face a classic ERP dilemma: to customize or not to customize.

Many users of enterprise resource planning (ERP) software try to avoid monkeying with it, in hope of reducing the complexity of installing and upgrading the applications. But sometimes that's the only way to get the software to do everything they need it to do.

For example, Texas Christian University (TCU) installed PeopleSoft's student administration software last spring and is running it without encountering the big problems plaguing fellow user Cleveland State University [News, Nov. 22].

But first, TCU had to do a heavy amount of development work to plug holes in the applications, said David Edmondson, assistant provost for information services at the Fort Worth, Texas, school.

TCU knew going in that some work-arounds would be needed, but Edmondson said the cost of the changes turned out to be higher than expected.

At one point, 27 consultants from Cambridge Technology Partners Inc. in Cambridge, Mass., were working on the project. "That's a lot more than we ever dreamed of having," Edmondson said.

Not Without Problems

Even so, the system isn't flawless. Students can register for classes via the Web in just five minutes, but Edmondson said some administrative tasks take longer than they did on TCU's old mainframe. But the school had to make the change this year for year 2000 reasons.

Cleveland State, on the other hand, has tried to minimize customization work. But the school is still waiting for PeopleSoft to deliver "a complete system, which we don't have now," said Joseph Nolan, a Cleveland State vice president and head of a task force that's trying to fix the system. Since last fall, the school has had major difficulties processing financial aid and recording grades.

There are no easy answers for other users who find themselves in the same situation, said David Dobrin, an analyst at Benchmarking Partners Inc. in Cambridge, Mass. "All the choices are bad," he said.

Catholic University of America in Washington doesn't have Y2K problems with its current minicomputer-based administrative systems. So it was able to schedule a staged rollout of PeopleSoft applications that's due to be finished next fall, said CIO Peter Murray.

Some of the modules in Pleasanton, Calif.-based PeopleSoft's latest release "are quite mature," Murray said. But the school decided to delay its installation of the financial aid piece from early oext year to the fall to give PeopleSoft more time to upgrade that application, he added.

Liz Dietz, a PeopleSoft vice presideot, said two financial aid upgrades are due by mid-2000. But customization needs often depend on what users are trying to do with the software, she added.

Three Strikes

Most users try to avoid customizing ERP applications for three reasons:

- Software installation costs can increase substantially because of the need to hire consultants.
- Custom code written to create work-arounds that fill holes in the software has to be maintained.
- Application upgrades can become more complicated because users have to make sure the custom code will still work with new software releases.

Online Bookseller to Plead Guilty to 'Wiretapping' Amazon

Alibris case a boost for encryption

BY CHRISTINE MCGEEVER AND DOMINIQUE DECKMYN

Online bookseller Alibris will plead guilty to the Internet equivalent of bugging the competition's conference room, according to the U.S. Attorney's Office in Boston.

The U.S. District Court in Boston has charged Alibris, which also operated an e-mail service, with 10 counts of illegally intercepting e-mail sent by competitor Amazon.com Inc. to business partners and customers and one count of access device fraud. The plea goes before U.S. District Judge Michael A. Ponsor today.

If Ponsor accepts it, Emeryville, Calif.-based Alibris will pay a $250,000 fine rather than the $2.75 million it might have paid if it went to trial and was found guilty on all 11 counts. Each count carries a $250,000 maximum penalty.

Alibris is named as the "successor in interest" to defendant Interloc Inc. in Greenfield, Mass., which has since merged with Alibris. Interloc operated Valinet, an Internet service provider also in Greenfield, and provided its customers with "interloc.com" e-mail addresses.

The case calls into questioo the wisdom of using an Internet service provider that stands to benefit from reading your messages and of whether to encrypt e-mail, legal experts said.

According to the court filing, early in 1998, Interloc altered its e-mail system and intercepted 3,295 e-mail messages from Amazon.com to book dealers between April 13 and June 8, 1998. The messages were stored on Alibris' computers.

Interloc's intended use of the e-mail was to create a database of dealer purchases and to analyze the bookselling market for competitive advantage, according to the filing. Alibris President and CEO Martin Manly wouldn't return *Computerworld*'s phone calls.

"It's questionable whether you would want your [Internet service provider] to be someone who could derive value from reading your e-mail," said Paul Hoffman, director of the Internet Mail Consortium, an industry group. Hoffman said other service providers could derive valuable profiling information by following customer correspondence with electrooic retailers.

Michael Overly, an attorney at Foley & Lardner in San Francisco, called the case a clear argument in favor of companies encrypting Internet e-mail transactions. "As encryptioo technology becomes easier and easier to use, it becomes less and less reasonable not to use encryption for sensitive information," he said. While e-mail interception is a criminal offense, victims can also sue for damages under the Electronic Communications Privacy Act.

Officials from Amazon.com had no comment on whether they had any plans to file for damages against Alibris.

Meanwhile, market circumstances have actually brought Alibris and Amazoo closer together. In April, Alibris became a "charter merchant" for Amazon.com Auctions, a new shopping service from the online video, music and book retailer.

P&G Analysis System Stumbles

BY ROBIN ROBINSON AND LINDA ROSENCRANCE

Adding new levels of detail this past summer to Proctor & Gamble Co.'s global business analysis system also added some glitches, the company said last week. But the problems are confined to the company's SourceOne system — not the consumer products manufacturer's supply-chain or financial systems, said Linda Ulrey, a spokeswoman at P&G.

P&G business unit managers in 140 countries use the system to analyze markets, financials, shipment information and product supply, she said.

P&G's information technology group used heavily customized business intelligence and data warehousing tools to create SourceOne, Ulrey said, but she declined to name the products used to create the system. The system went live July 1, and the company plans to roll out more features to the system for at least another year, she said. As new capabilities were added after the initial rollout, some glitches were uncovered, Ulrey said.

Instant Data

The SourceOne application allows managers worldwide to send their reports directly to P&G's Cincinnati headquarters via the Internet, instead of going through a data collection process that isn't automated, said William Steele, an analyst at Banc of America Securities in San Francisco.

"From a management perspective, it's nicer to have the data at your fingertips, and it's more efficient," Steele said. "So this is an installation problem, but it's not meaningful to earnings or stock price."

The SourceOne application was developed as part of Organization 2005, the company's reorganization around business lines, instead of by geographic region. About half of the company's sales of consumer products, such as Crest toothpaste, Tide laundry detergent and Pampers diapers, come from outside the U.S.

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BRIEFS

May I Ignore You?

Web sites have been slow to adopt customer service technologies, spiking an 8% increase in already unacceptable customer service failure rates. Of 125 leading sites polled by New York-based Jupiter Communications Inc. during the third quarter, 46% either took five days or more to respond to a customer request, never responded at all or didn't post an e-mail address where customers could send questions (see related story at right).

AOL Prepares Online Billing

Some time early next year, America Online Inc. subscribers and visitors to the Vienna, Va.-based company's gateway Web site will be able to pay bills online using software from Intuit Inc. in Mountain View, Calif. The companies signed a five-year deal under which Intuit will provide bill tracking and payment services to AOL, AOL.com and AOL subsidiary CompuServe Corp. in Columbus, Ohio. Financial terms and possible fees for users weren't disclosed.

Asian Online Spending On the Rise

Asia-Pacific Internet users will spend more than $2.2 billion online this year, more than three times the $723 million they spent last year, according to a new forecast from market researcher International Data Corp. (IDC) in Framingham, Mass. The number of Internet users in the Asia-Pacific region (excluding Japan) this year has increased by 69% to 21.6 million people from 12.9 million a year earlier, according to IDC.

Where in the World?

Starwood Hotels and Resorts Worldwide Inc. in White Plains, N.Y., has signed on Palo Alto, Calif.-based Vicinity Corp.'s Business Finder locator service for Starwood's Westin, Sheraton, Four Points and St. Regis Hotel Web sites. Business Finder, which will first appear on www.westin.com, will provide information, directions and maps to Westin's online customers worldwide.

Why Online Browsers Don't Become Buyers

Report: Lack of customer service prevents checkouts

BY STACY COLLETT AND JULIA KING

SHOPPERS MAY be rushing to online retail sites in record numbers this holiday season, but more than three-quarters (78%) of them will never make it to the checkout line.

Poor online customer services is to blame, and according to a new report that seeks to quantify the lost sales opportunities, the problem is growing.

Businesses lost $1.6 billion online last year by failing to Web-enable their customer service operations, according to Datamonitor, a market-analysis firm in New York. This year, losses are expected to double to $3.2 billion.

"One of the great fallacies of selling on the Internet is that you'll save on customer service costs because customers will serve themselves," said Bill Bass, vice president of e-commerce at Lands' End Inc. in Dodgeville, Wis.

But with 10 million new online shoppers expected during the holidays, customer service is needed more than ever, observers said. "They don't want to have any less service than they have gotten in the real world," said Norman Guadagno, vice president of marketing at Primus Knowledge Solutions Inc., a Seattle e-commerce software provider.

The online customer service spectrum includes self-service; assisted service, where customers make online queries that can be answered quickly; and directed service, where a sales representative offers specific items, interactive chat, telephone service and e-mail.

Lands' End is beefing up its customer service by pursuing the interactive approach.

Customer Service Snags

- Less than 1% of e-commerce sites offer live customer assistance
- 10% of shopping carts would be salvageable if better customer service was provided
- 8% of 69,500 U.S. call centers are currently Web-enabled

Results: $3.2B in potential online revenue lost in 1999

SOURCE: DATAMONITOR N.Y.

The apparel retailer struck a deal with WebLine Communications Corp. in Burlington, Mass., oow part of San Jose-based Cisco Systems Inc., for exclusive use of the technology behind its Lands' End Live service. The service that gives online shoppers real-time access — either by phone or text-based chat — to a human operator as they shop the site.

Lands' End has exclusive use of the technology through the end of this year. After that, it has an agreement whereby the technology can't be sold to its direct competitors for a certaio period of time. More than 350 customer service representatives also are available around the clock at the firm's three phone service centers.

Bass wouldn't say how much Lands' End has invested in customer service for its Web operations. But as more customers move online, the company expects savings to come from reduced printing and postage costs as it mails out fewer catalogs. Printing and mailing account for about 40% of the firm's operating costs.

Start-up Smarts

The Datamonitor report also points out that start-ups account for 70% of the Web sites that offer customer service.

Toysmart.com in Waltham, Mass., is expecting 50,000 orders per day during the holiday shopping rush. The toy retailer rings up 60% of its annual revenue during this period. With the competition just a click away, excellent customer service is a key differentiator, according to CEO David Lord.

One of the first things the company did was tap Sandra Charest — an executive at L. L. Bean Inc. in Freeport, Maine, which is renowned for excellent customer service — to be director of customer care.

Some observers expect a big turnaround in online customer service over the next year. Retailers are "starting to figure it out. ... They're in the business to win the customer's loyalty for the long haul," said Robert Folaron, executive director of Internet media practices at Electronic Data Systems Corp. in Plano, Texas.

Sun Hopes to Resolve Java Standards Snag

Consortium puzzled by copyright concerns

BY CAROL SLIWA

A Sun Microsystems Inc. official last week said he hopes the copyright and trademarks issues that stalled his company's Java standardization effort can be resolved at the Dec. 16 general assembly meeting of the Swiss-based consortium that's handling it.

Suo's latest standards initiative hit a snag last month when the company declined to turn over Java specification documents to ECMA International (formerly known as the European Computer Manufacturers Association), a Geneva-based consortium that submits its standards to the International Standards Organization (ISO).

"Our concern is that ECMA has no written rules regarding copyright and trademark protection," Sun Vice President George Paolini said last week, noting that the company wants to prevent Java fragmentation. "If we don't have protection on copyright and trademark, it's conceivable the documents in the specification could be modified in a way that creates a derivative work. I'm not saying that's going to happen, but we're going to ensure that that doesn't happen."

ECMA's secretary-general, Jan van den Beld, expressed confusioo over Sun's position. He said Sun initially indicated it would turn over the Java documentation and then changed its mind at a technical committee meeting last month.

"We have a very simple copyright policy, and that might not be sufficient for what Sun's lawyers want," van den Beld said. ECMA doesn't place any copyright on its standards, he noted.

Companies submitting technologies to ECMA can retain copyrights over technical documents, van den Beld said. But once an ECMA standard is finalized and given to the ISO, the ISO puts a copyright on the ECMA document, van den Beld explained. No company "can put a copyright on an ECMA document," he said.

ECMA's coordinating committee set a Dec. 1 deadline for Sun to respond to the following three alternatives:

- Submit the Java specification to ECMA.
- Write the Java standard based on information that is available through other companies or the public domain.
- Stop the standards effort.

Paolini said Sun plans to respond to that ultimatum, but it doesn't consider the Dec. 1 deadline to be valid. Instead, Sun plans to try to get a commitment about copyright and trademark at the Dec. 16 ECMA general assembly meeting.

Earlier this year, Sun had turned to ECMA after abandoning its fast-track standards effort with the ISO.

Creating a standard has been a concern for users worried that Java may fragment, especially in the wake of competing real-time Java standard efforts backed by Hewlett-Packard Co. and Microsoft Corp.

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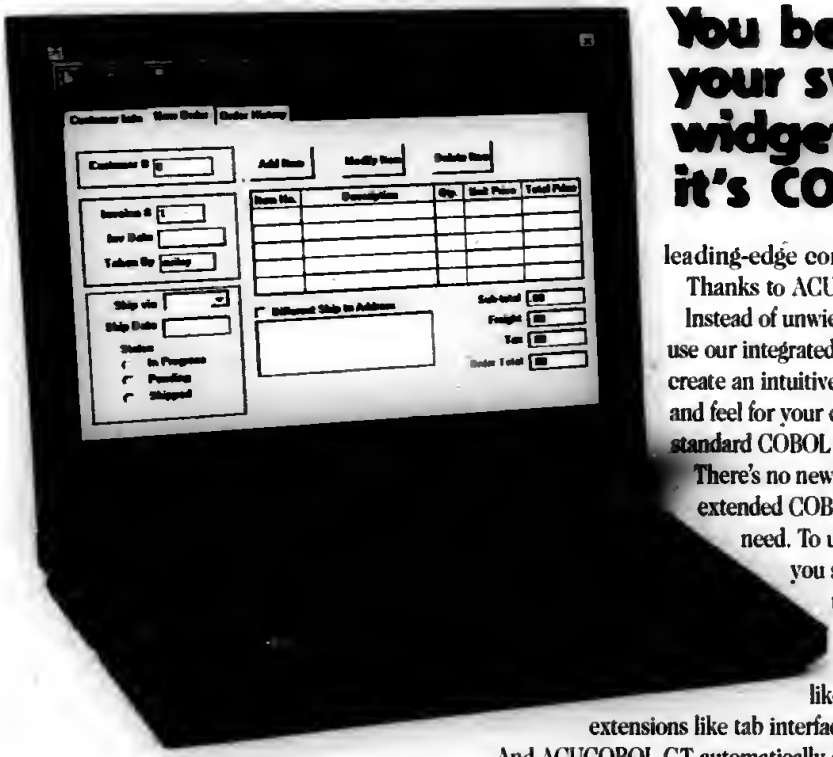

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Continued from page 1

OSHA Proposal Requires IT Action

to look sideways, or up or down?"

Under OSHA's proposal, employers would need to implement a basic ergonomics program. That means assigning someone to be responsible for ergonomics and providing employees with information on the risks, the symptoms and the importance of reporting injuries early.

Employers would also be responsible for setting up a system for employees to report problems. Once a worker reported an injury, the proposal would require that the employer improve conditions in that part of the workplace.

At USAA, the country's fifth-largest auto insurer, ergonomics is already an important part of the company's fabric. USAA has a multidisciplinary team of IT, usability and ergonomics professionals who make sure end users are involved in system development, Austin said.

"We do hardware testing to make sure it will work for our users in the environment we have," he said. "The reason we do it is for . . . the benefit of the user, which is also better for the bottom line. It cuts down on lost workdays and workmen's compensation costs and improves productivity."

Users at Risk

Computer ergonomics involves a variety of factors, such as the worker's eyewear, posture and typing force, as well as the position of his chair, keyboard and monitor, experts said. Tom Albin, an ergonomist at 3M Co. in Minneapolis, said anyone who uses a computer extensively is at risk for developing musculoskeletal disorders. "There is a lot of science that shows that interventions are effective," Albin said.

Several ergonomists supported the OSHA standard as good for both employees and their employers.

"Employees who are not injured are more productive," said Alan Hedge, an ergonomics expert at Cornell University in Ithaca, N.Y.

Marvin Dainoff, director of the Center for Ergonomic Research at Miami University in Oxford, Ohio, agreed. "It's a win-win situation, if the courts can stay out of it," he said.

But that may not happen.

OSHA's proposed regulation comes after eight years of debate. Labor unions such as the AFL-CIO have pushed for aggressive regulations, while business groups —and Republicans in Congress — have fought the regulations, calling them too costly and burdensome.

"OSHA has written a blank check on the backs of American workers and their employers," said Randel Johnson, vice president of the U.S. Chamber of Commerce in Washington, in a statement. "If OSHA persists in pushing forward with this ill-considered regulation, then we'll meet them in court."

OSHA's proposal would cover 1.9 million companies and 27 million people who work at keyboards, on assembly lines or in other jobs that require repetitive motion or heavy lifting. Employers now spend $15 billion to $20 billion per year in workers' compensation for injured workers, OSHA said.

OSHA estimated the total cost of employer compliance at $4.2 billion each year — $150 per workstation that is fixed — and said the rules would save employers $9 billion annually.

But some business groups say the program could end up costing much more.

"We feel this is a cookie-cutter approach," said Sherry Saunders, a spokeswoman for the Center for Office Technology in Alexandria, Va. "We think businesses need to do what's best for them and their employees. We're also concerned that this can be triggered by one employee. That will be costly for employers."

Cost is a big issue. "OSHA says this will cost employers about $4.2 billion — that's up from their original estimate of $1.7 billion. And we think the $4.2 billion [estimate] is also low," Saunders said.

She added, "We think it is rather naive [of OSHA] to think that, in this day and age, employers are not paying attention to these problems."

OSHA will accept public comments on the proposal (available at *www.osha.gov*) until Feb. 1.

JUST THE FACTS

OSHA's Ergonomics Proposal

What's included? Companies would be required to have an ergonomics coordinator; information for employees would need to be posted; rules for reporting workplace injuries that are ergonomically related would need to be made.

Who's covered in the standard? About 1.6M work sites with workers involved in manual handling or manufacturing production jobs (includes computer workers).

What are the costs? Fixing a workstation averages about $150.

What are the benefits? Protecting 27.3M workers at 1.9M work sites from musculoskeletal disorders (MSD); a $22,500 savings in direct cost for each MSD prevented; about $9B per year in savings.

SOURCE: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, WASHINGTON

Continued from page 1

SIM Seeks to Quash Legislation

two key technology states may give software vendors all the leverage they need to apply UCITA's provisions throughout the U.S. Vendors could incorporate in any state that approves UCITA, legal experts said. Virginia may be the first state to adopt it, acting early next year.

UCITA, which establishes the rights of software buyers and sellers, covers topics such as shrink-wrap licenses, contract disputes and vendor liability for defects.

Once approved in a few key states such as Virginia, home of America Online Inc., or Washington, headquarters of Microsoft Corp., "then to a large extent, the battle might be lost. . . . You have major vendors with a huge client base applying this law," said John Kennedy, an attorney at Morrison & Foerster LLP in New York.

> [UCITA] erodes our ability to negotiate reasonable agreements.
>
> RANDY ROTH, SIM MEMBER

SIM and other organizations intend to launch a lobbying group, called 4Cite (For a Competitive Information and Technology Economy), in the next few weeks to lead the effort, said Skip Lockwood, an organizer of the group.

The National Conference of Commissioners on Uniform State Laws approved UCITA last summer and sent it to state legislatures [News, July 26 and Aug. 2].

Various critics, including SIM member Roth, are troubled that UCITA would allow software vendors to disable software if they believe a user has violated the contract terms. A vendor would be able to act in much the same way a bank repossesses a car.

UCITA also sets rules that upset current practices on contracts, said Roth. For instance, UCITA establishes a rule that if a license doesn't mention duration, then it's limited for a reasonable time. That provision "erodes our ability to negotiate reasonable agreements," Roth said.

But proponents say UCITA will give businesses predictability and uniformity, especially for e-commerce.

"If a state rejects UCITA, they are making a strong statement that they are rejecting e-commerce in their state," said Marc Pearl, general counsel for the Information Technology Association of America, an industry trade group in Arlington, Va.

Joel Rothstein Wolfson, vice president and associate general counsel of the Nasdaq Stock Market Inc., recently praised UCITA and said it will let businesses know what they have to do to make contracts valid on the Web.

And Wolfson said UCITA will actually make it tougher for vendors to disable software. UCITA establishes a regulatory scheme so tough "that no lawyer in their right mind would advise their client to go through with it," he said.

All-Optical Network Initiatives Launched

Williams, Qwest move to push data over fiber

BY JAMES COPE

Two companies last week announced all-optical networking initiatives, which promise speeds of 10G bit/sec., or four times faster than existing IP networks.

Williams Communications Group Inc. in Tulsa, Okla., said it will begin trials early next year on an all-optical network over its fiber-optic route from Houston through Atlanta to Herndon, Va.

Williams said it will employ optical networking products from Corvis Corp. in Columbia, Md.

In a separate announcement, Qwest Communications International Inc. in Denver reported it had successfully completed a field trial of an all-optical test bed and plans to roll out an all-optical network as an extension of its existing fiber infrastructure in the first half of next year.

Qwest also said it has taken options for equity interests in Corvis and Qtera Corp. in Boca Raton, Fla.

Qwest will use its resources, along with those of Juniper Networks Inc. in Mountain View, Calif., and Cisco Systems Inc. in San Jose, to develop an open-vendor, all-optical network.

Founded last year, privately held Qtera, is, like Corvis, among the emerging companies that specialize in high-speed, high-bandwidth optical networking technologies.

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- Bob Lesher and Charlie Bise, Information Technology, Exel Logistics

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Doctors Prescribe Meds Via Handhelds, Dot-Com

Rx.com likely to face increasing competition

BY STACY COLLETT

Doctors will soon be able to trade paper prescription pads for wireless handheld devices when prescribing drugs.

Online pharmacy Rx.com Inc. has joined with handheld electronic prescription-pad maker Way Over the Line LLC in Maineville, Ohio, to allow doctors to electronically submit prescriptions at the patient's side.

The PocketScript device, being piloted by 70 doctors in southern Ohio, sends prescription orders to Rx.com's fulfillment center, where insurance information is verified and the order is filled. The prescription is shipped to the patient in one to three days, depending on the delivery method.

The device also includes a Physician's Desk Reference, a list of medications covered by the patient's insurance plan and an alert for drug-to-drug or drug allergy interactions.

Officials at Austin, Texas-based Rx.com claim that the electronic pads get prescriptions to patients more easily and quickly and eliminate the risk of error associated with paper prescriptions.

Observers said electronic prescription pads could help boost the online-only prescription market, which is expected to grow from $20 million in 1999 to $966 million in 2003, according to Jupiter Communications Inc. in New York.

Still, there are questions of timeliness, privacy and relationships with insurers.

Roger Phillips, executive vice president of corporate development at Rx.com, said he wants doctors to use the device for "nonacute" prescriptions. "If you need an antibiotic for a raging strep throat, you're better off walking into your pharmacy," Phillips said.

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Insurance companies also restrict which pharmacies cover prescriptions, and observers said Rx.com doesn't have the insurance relationships that some of its competitors do.

The real challenge for Rx.com will be winning over doctors who are reluctant to adopt new technology, according to Jupiter analyst Claudine Singer.

"Doctors spend seven minutes with a patient. Anything that changes that workflow [had] better save them time and money, or they won't do it," Singer said.

Singer added that both Rx.com and Way Over the Line are small players in their respective markets and that bigger players may come along and displace them.

PlanetRx.com Inc. this month unveiled a remote-shopping service with IBM. To use the service, consumers download remote-shopping software onto handheld devices from Santa Clara, Calif.-based Palm Computing Inc. and then order over-the-counter medicine and health care products. PlanetRx officials said the San Francisco-based company will add prescription medication features to the offering in the future.

Clicking for Prescriptions

*Prescription medications as a portion of the overall online pharmacy market**

1999	$20M (22%)**
2003	$966M (40%)**

Total U.S. pharmaceutical market, 1999: $91B

*Total market includes health and beauty aids, supplements and over-the-counter medications

**Projected

Christmas Virus Makes A Bad Gift

BY ANN HARRISON

Antivirus researchers have issued warnings about a fast-spreading e-mail virus that will reformat a victim's hard drive on Dec. 25 and could release confidential documents.

The "Prilissa" virus is a combination of the earlier Melissa virus and a program called PRI. It infects Microsoft Word 97 documents and uses the PRI code to place colored shapes in infected users' documents.

According to antivirus software vendors Network Associates Inc. in Santa Clara, Calif., and Symantec Corp. in Cupertino, Calif., Prilissa exploits a hole in Microsoft Outlook and Outlook Express that enables it to automatically mail itself to Windows 95 and 98 users. Arriving as an infected e-mail attachment, Prilissa sends itself and the last document in use when the virus hit to the first 50 people in the infected user's Outlook contact list as a message that appears to come from the infected user.

The text of the message reads, "This document is very important and you've GOT to read this!" According to Symantec, when the infected document is opened, the virus disables virus protection security settings, conversion confirmation and recently opened file lists. Network Associates has posted updates to protect against Prilissa. Symantec said users of its Norton AntiVirus software are automatically protected against the virus.

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Travelocity Revs Up Server for Holidays

Uses IT to attract repeat customers

Online travel site Travelocity.com has beefed up its server capacity by 50% in anticipation of the holiday travel season. *Computerworld* senior writer Stacy Collett spoke with **Terry Jones**, president of Sabre Group Inc.'s Travelocity, about the company's strategy to attract frequent buyers and the information technology challenges of its upcoming merger with Preview Travel Inc. The combined site is scheduled to launch in the second quarter of 2000.

Q&A

Q: What prompted Travelocity to increase capacity?

A: The faster we are, the more we sell. We've added shopping from the home page. You can buy a ticket in three clicks. That's why we added the server capacity. We've also spent a good bit of time reducing the complexity of our Web site to reduce the number of layers to make it faster.

Our site is 90% dynamic because every time you come in, it's looking up the fare, checking the flights, getting the hotel availability. A lot of the data we get comes out of our big Sabre mainframe engine. We want as thin a system as possible in front of that so we give maximum speed to the customer.

We've also done upgrades on Web connections. We've added a lot of [Internet service provider] capacity at the same time.

Q: What technology challenges do you face as you integrate sites with Preview Travel?

A: When we first started Travelocity, we were partnered with a company in San Francisco. Their [site] did destination content, we did transactions. That's where we're going again. . . . Preview servers will be dedicated to vacation sales, destination content and community. Our side will be the transactional side.

The cool part about the Web is that we can have one home page, and some of the buttons on the page direct people off to a [Preview Travel] server in San Francisco, and they'll never know the difference.

There will be some coordination challenges. But the Web makes it very easy for diverse content and diverse development.

TERRY JONES: "The faster we are, the more we sell"

It's not a huge technological challenge. We both use Vignette Corp. [software] as a database content tool; we both program in [Tool Command Language]; we both use Oracle for online customer databases.

The merger is our strong points coming together.

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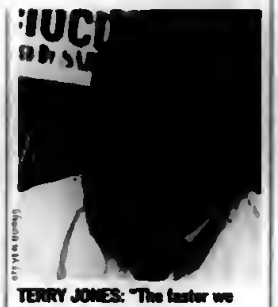

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- Peter Nikonowitsch, Engineering Manager, Hitachi Semiconductor

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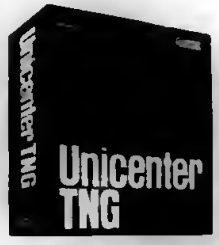

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IBM Latest to Offer More E-Business Services

'Innovation centers' will provide technical, marketing assistance for Web ventures

BY JAIKUMAR VIJAYAN

A GLOBAL network of IBM "innovation centers" promises to help companies not just with the technology issues but also the marketing aspects of setting up electronic-business ventures.

The centers, three of which have already opened in Chicago, Dallas and Washington, will provide a mix of application development, integration and implementation services, plus creative services, packaging, branding and marketing.

Similar centers will be opened in Boston, Los Angeles, New York and several European countries over the next six months, according to Doug Elix, a senior vice president at IBM Global Services, which announced the plan two weeks ago.

Each center will be staffed by 250 to 400 specialists and will be supported by IBM's systems integration group.

IBM's move is an example of the growing attempt by traditional systems vendors to play a bigger part in their customers' electronic-business ventures.

Other vendors, such as Sun Microsystems Inc. and Hewlett-Packard Co., offer technology bundles and shared-risk financing options to help e-commerce start-up companies. HP is even getting into equity relationships with some of its customers to help roll out new ventures quickly.

IBM's plan differs because it adds marketing, promotional, creative and other strategic services, said James Garden, an analyst at Technology Business Research Inc. in Hampton, N.H.

"It is innovative in that it comes at the problem also from a business angle," Garden said.

Outsourcing Model

FTD.com, which has been selling flowers and gifts online since 1994, is using IBM's services to overhaul its Web site as part of a wider rebranding and market repositioning effort, said Brian Chapman, vice president of strategy and development at the Downers Grove, Ill.-based company.

"IBM is a sort of general contractor in charge of the whole renovation," Chapman said. "That means they work with the architects and various other specialists and are doing a lot of work themselves, in order to get the work done on time and exactly to our specifications. . . . They have taken our ideas and gone much further," Chapman said.

Similarly, Cozone.com, an online subsidiary of Dallas-based CompUSA Inc., used IBM's services to set up its brand-new venture in eight months, said Stepheo Polley, CEO of the Boston-based company.

IBM helped with the strategic planning, positioning, Web development, deployment and application integration and is also hosting the applications for Cozone, Polley said. ▶

VENDOR	WHAT THEY OFFER
IBM	Hardware; software; integration services; Web site design, development and hosting; strategic planning and consulting; branding, marketing and promotional services; financing options
Hewlett-Packard	Hardware; software; integration services; Web site design, development and hosting; shared-risk financing; equity partnerships; free hardware and software for share of future revenue
Sun Microsystems	Bundled hardware and software; integration services; Web site design, development and hosting; comarketing and financing options

Platt and Hewlett-Packard's Net Lesson

'We missed the Internet,' outgoing HP Chairman Lewis Platt concedes

After 33 years at Hewlett-Packard Co., including seven as its CEO, **Lewis E. Platt** said he will become chief of California wine maker Kendall-Jackson at the end of the year. Platt's exit as chairman from HP comes at a time when the $42 billion hardware maker is trying to recast itself as a one-stop Internet applications vendor.

In a talk with *Computerworld* senior editor Jaikumar Vijayan, Platt, 58, makes it clear that not positioning HP as an early Internet leader was a key object lesson.

Q: Why Kendall-Jackson?

A: Going off and becoming CEO of a winery was certainly not something I had in mind. It probably would be more elegant to tell you that it was part of a grand plan, but it wasn't. It came along. I have a strong interest in wines. I am a collector, I have an interest in the business, and I have always been fascinated by it.

Q: What would you say were your career highlights at HP?

A: Certainly I'd have to start off with the last seven years as CEO. We enjoyed great success in those seven years, [and] we had our share of ups and downs. Unfortunately, the back half of 1997 and 1998 [when profit increases slowed] were the downs, but we came bounding back in 1999.

LEWIS PLATT: "It is absolutely foolish to say it is the end of the PC era"

We certainly had some spectacular years in 1994, '95 and '96. On balance, when I look at what we did during those seven years, [we had triple] revenue growth, five-times earnings growth.

Q: What went wrong during 1997 and 1998?

A: No. 1, we had, I think, missed the Internet. I think we understood the significance of what was happening and were even a player and benefactor of what was happening. A lot of the Internet sites used our servers, and most of the sites were actually managed by our network management software.

But I think what happened was because we were not out touting ourselves as an Internet player and didn't do a good job marketing our capabilities, we fell off the leading edge in terms of being a thought leader in the market. At the same time, we were just really getting beaten up by the Asian financial crisis and the collapse of Asian markets. Because we had done such a good job of penetrating those markets . . . we were much more dependent on those markets than many of our competitors.

Q: Going forward, is it going to be possible for any one company to dominate the industry like IBM once did or Microsoft Corp. has done for most of the '90s?

A: I don't think so, honestly. But having said that, one never knows. I was pretty sure that when IBM's dominance of the industry ended, nobody else would dominate. But Microsoft has come pretty close. We are seeing an industry which is much more highly fragmented than it used to be. We are seeing an industry where alternatives come to market a lot faster than they used to. And all those things make dominating the industry very, very difficult.

Q: Does Microsoft have a point when it claims that it faces more competition today than at any other time?

A: I think they have a point, but that is not the whole basis of the case, obviously. There are more people challenging them. There certainly are challenges in the application software area and a very important challenge in the Unix area.

Q: Are PCs dead?

A: I have heard that said, and frankly, I think it is nonsense. In fact, I think it is growing and will probably continue to grow for quite a while. There are going to be other ways that people access the Net, and there will be alternatives to PCs . . . but it is absolutely foolish to say it is the end of the PC era.

[IBM CEO] Lou Gerstner was one of the first people to say that. We could have said it was the end of the mainframe era back in the late '80s, but isn't it amazing how the mainframe continues to sell and that some of IBM's better years have been in the last couple of years? ▶

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Supercomputing At Risk, Panel Says

As feds cede leadership, direction is imperiled

BY MARK HALL
PORTLAND, ORE.

THE U.S. GOVERNMENT once dominated supercomputer development but has surrendered that leadership to industry. That retreat has put supercomputing technology at risk, according to analysts at International Data Corp. (IDC).

The analysts spoke here at SC99, formerly known as the Supercomputing Conference, Nov. 17.

During a roundtable, IDC analyst Debra Goldfarb said the government lacks a single vision to give supercomputing vendors direction. This has put commercial users of high-performance computers in the role of providing leadership to research and development for the highest end of the computer industry.

"The government has shrunk in its influence at the high end," Goldfarb said.

The analysts said political and economic pressures have contributed to this decline, in addition to the government's and vendors' insistence on building systems that serve commercial interests as well.

"The government recognizes that commercial applications need to be taken into account," said Earl Joseph, another analyst at Framingham, Mass.-based IDC.

But both analysts agreed that the strategic nature of supercomputers makes it imperative for the government to step in and work with vendors to continue to advance the state of the art. The problem is that inside the government, "religious wars" are going on about what direction supercomputer development needs to take, they said.

For example, at the three major U.S. weapons laboratories — Lawrence Livermore, Los Alamos and Sandia — budget and political considerations forced researchers to build only a single, shared 100-T floating-point operations per second computer destined for delivery in 2004 instead of one for each lab, as some had hoped for.

Dona Crawford, a director at Sandia National Laboratories, told an audience here that her research team is trying to construct this system — and the network that will connect it to the three labs — with as many industry-standard components as possible to keep costs down. She said working with lowest-common-denominator technologies, such as TCP/IP, are "barriers for us to tackle."

Joseph said, "Commoditization of technology, whether processors or operating systems, is distracting us from doing real science."

Going Commercial

Most of the 6,000 attendees at SC99 came to discuss the most advanced aspects of computing today. But many also talked about how high-performance computing is being rapidly adopted by commercial users.

SC99 attracted academic and scientific researchers pushing the technology envelope. For example, the Department of Energy's Brookhaven National Laboratory demonstrated a theoretical visualization of what matter in the universe looked like microseconds after the Big Bang.

The same data visualization techniques that depict post-Big Bang reality are also being applied to large data sets in business for decision-support systems, said Ian Curington, director of Advanced Visualization Systems Inc. in Surrey, England.

Robert Grossman, a professor at the University of Illinois in Chicago, said e-commerce companies are adopting data mining technology once restricted to scientific applications. "Internet merchants are using it to identify online credit-card fraud and reduce their risk," he said. – *Mark Hall*

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A Call for 'Innovative' IT Investments

Make room for funding, says Oracle president

At its recent Open World conference in Los Angeles, Oracle Corp. executives like **President Ray Lane** pounded a familiar theme: Count on our databases and tools to link you to smoothly integrated systems. Lane pursued that theme in a talk with *Computerworld* reporter Robin Robinson.

Q: In your keynote, you said companies must budget for innovation, not for history. What did you mean?

A: Maintenance, rentals and support contracts all get taken care of because they're the annuity that keeps the lights on. Then, as CEOs require tighter management of budgets ... there's nothing left over for innovation, meaning apps that will allow me to take buying onto the Internet or allow my customers to look into my supply chain. You've got to make room for that funding and starve the old systems.

LANE: Best-of-breed isn't always the best

Q: So companies should let their existing architecture wither away?

A: They can't just say, "Well, we're going to ignore the fact that we've just spent $100 million putting in a financial system." Over time, they have to be adapted for Web-based usage. The next step is more critical, as they put in systems for selling and buying.

Q: The message from Oracle Chairman Larry Ellison seems to be . . .

A: Replace everything.

Q: Oracle is trying to sell the entire worldwide package.

A: We are, absolutely. What [Ellison] was saying is that today, most systems are bought from specialized software vendors. And so if user departments inside corporations are allowed to buy, they've put together a quilt that is not integrated.

We will challenge the world to think about, "Do I really want to buy the best in class, or is it more important to have the integration?"

Integration has been a big problem. It's why SAP [AG] sold so much. SAP came in in 1993 and offered the big kahuna promise: integrated everything. You may forego some other features to do that. SAP would have been a lot more successful if customers would have followed their rules. Because SAP said, "You want integration? That means don't change the system." But customers went in and changed it.

Customers like the openness [of systems] because it gives them pricing leverage, but when it comes down to implementation, they want one vendor.

Compuware Raises Eyebrows

Most analysts say antitrust action justified

BY JAIKUMAR VIJAYAN

THE DEPARTMENT of Justice's recent bid to block Compuware Corp.'s planned purchase of mainframe software rival Viasoft Inc. may have been buried by the Microsoft Corp. case. But it highlights similar concerns, analysts said.

The DOJ's antitrust division sued to block the purchase of Phoenix-based Viasoft early this month, claiming that the proposed $167 million merger would result in higher prices for testing and debugging tools used in mainframe software development, monitoring and failure management.

Allowing Compuware, a $1.6 billion company with headquarters in Farmington Hills, Mich., to buy $104 million Viasoft would eliminate an important source of competition, said Joel Klein, assistant attorney general at the department's antitrust division.

"It is fair to say that an acquisition of Viasoft would leave little choice in the interactive debugging marketplace for mainframe applications," said Colin Rankine, an analyst at Giga Information Group Inc. in Boston.

Little Choice

Apart from similar technology from Computer Associates International Inc., users will have little choice for such debugging tools, Rankine said. From a software negotiation standpoint, choosing between CA and Compuware "is like being between a rock and a hard place," Rankine said.

"Compuware is joining CA as one of the powers of software, and, honestly, the result of that is not good for the company," said David Floyer, an analyst at IT Centrics, a mainframe consultancy in San Francisco. It's the reason why "what is really a minnow is becoming a problem for them to swallow," Floyer said.

A Compuware spokesman said the company disagreed with analysts' opinions about the company. Established in 1977, Compuware has a portfolio of over 90 software products aimed mainly at firms in the financial, manufacturing, telecommunications and health care industries. Much of the company's growth in the '90s has come from such acquisitions. Since 1997, Compuware's purchases have included Vine Systems, NuMega Technologies, Vireo Software, Data Processing Resources Corp., Reliant Data Systems and recently a part of CACI International, Inc.

"Basically, Compuware is in the midst of doubling up its specialty in the application development cycle and professional services, which are its roots," said Jonathan Eunice, an analyst at Illuminata Inc., a consultancy in Nashua, N.H.

But the Justice Department's action doesn't make sense, he said. "Given that DOJ approved the CA/Platinum and CA/Legent deals, which had far more potential impact on software pricing and consolidating the software market, it's hard to understand this reticence" relating to Compuware and Viasoft, Eunice argued.

Antitrust Concerns

	COMPUWARE	VIASOFT
1999 revenue	$1.6B	$104.3M
Net income	$349M	$2.4M
Products	Testing and documentation, error detection and debugging, fault analysis, data management and systems management	Application maintenance, software assessment tools and application modernization software

Siemens Integrates U.S. Unit Into Amdahl

Expands combined presence here

BY MARY LISBETH D'AMICO

Siemens AG's U.S. computer systems group is going to be merged into Amdahl Corp., a subsidiary of Tokyo-based Fujitsu Ltd., the companies announced last week.

The deal will give Munich-based Siemens and Sunnyvale, Calif.-based Amdahl an expanded presence in the U.S. information technology market, the companies said in a joint statement. It will also broaden their product portfolios.

With this move, Siemens has reached its goal of no longer "going it alone" in the computer business. "There is no server or PC that is now sold with just the Siemens name on it," said Peter Gottal, a Siemens spokesman in Munich.

Amdahl makes mainframes, storage systems and software and offers consulting services, while Siemens' U.S. systems group makes high-end servers.

Under the agreement, Amdahl will incorporate Siemens' Primergy server family and its Unix-based Reliant servers into its own product portfolio. Siemens will also contribute 65 U.S. employees to Amdahl.

Starting immediately, Amdahl will also market and sell Fujitsu Siemens Computers BV products in North America, the companies said. Fujitsu Siemens Computers, which combines Fujitsu Computers Europe Ltd. and the Siemens Computer Systems division, opened its doors in October.

The U.S. move represents a further broadening of the relationship between Amdahl parent Fujitsu and Siemens. In June, the two struck a global sales and marketing agreement that's centered around setting up a European joint venture.

Siemens will continue to support its U.S. customer base and Fujitsu products sold in the U.S. through its IT services business, which is part of Siemens Information and Communication Products LLC, the companies said.

D'Amico writes for the IDG News Service in Munich.

Unisys Faces Class Action

BY JAIKUMAR VIJAYAN

A class-action suit filed against Unisys Corp. claims that the company misled investors about its financial condition earlier this year.

The suit was filed this month by an undisclosed plaintiff on behalf of all investors who purchased or otherwise acquired Unisys securities between May 4 and Oct. 14.

The suit was announced by the plaintiff's counsel, the law firm of Cohen, Milstein, Hausfeld & Toll PLLC. It didn't specify what remedy is sought.

A Unisys spokeswoman said the company has reviewed the complaint. "We believe it is totally without merit," said the spokeswoman.

The complaint charges that certain officers of the Blue Bell, Pa.-based company misrepresented its financial situation during the relevant period. According to the suit, Unisys issued misleading press releases regarding major contracts that failed to mention certain regulatory conditions that would delay the revenues expected from those contracts.

The action also alleges that the officers cashed in on the resulting rise in stock prices.

BRIEFS

Cabletron to Sell Unit

Cabletron Systems Inc. in Rochester, N.H., last week said it would sell its broadband router subsidiary, FlowPoint Corp. in Los Gatos, Calif., to Efficient Networks Inc. in a stock deal valued at about $860.6 million. Efficient, in Dallas, supplies Digital Subscriber Line (DSL) access products.

Browsers in the Sky

Inflightonline.com, a provider of in-flight Internet and intranet services, has joined forces with Lycos Inc., an Internet portal in Waltham, Mass., to provide limited Web access in air travelers. Inflightonline said this is the first time such services will be provided on domestic flights. As part of the alliance, Lycos has acquired a 10% stake in Deerfield Beach, Fla.-based Inflightonline.

Online Marketplace

GoTo.com Inc. in Pasadena, Calif., last week said it would buy a search and comparison technology company for $250 million. Its purchase of Cadabra Inc. in San Mateo, Calif., for $8 million in cash and stock, is expected to close in January.

DSL Partnership

SBC Communications Inc. and Prodigy Communications Corp. have teamed to deliver DSL broadband Internet access in individuals and small businesses. San Antonio-based SBC will take a 43% equity stake in Prodigy and will make the White Plains, N.Y., company its Internet service provider for its retail consumer and small business customers, according to the companies. In turn, Prodigy said it will manage SBC's 650,000 dial-up, integrated services digital network and basic DSL customer base.

$40 Million Purchase

Niku Corp., a Redwood City, Calif., vendor of Internet-based software for consulting-management and professional-services operations, last week said it will buy Proamics Corp. in Lincolnshire, Ill., for about $40 million in stock. Proamics makes back-office applications.

With the rise of the Internet, there has been some speculation as to the role Microsoft will play.

Surprisingly (to some), Microsoft has not gone the way of the brontosaurus. The proof? Microsoft® Windows® DNA, our comprehensive platform for easily building distributed Web apps today. More proof? There are more Web sites (including Ask Jeeves, drugstore.com, Dell.com, and Nasdaq®) running on our platform than any other, including Sun Solaris.*

The Windows DNA platform includes Internet-enabled tools you know today, such as the Visual Studio® 6.0 development system and Microsoft SQL Server™ 7.0, combined with Windows 2000, an Internet-scale OS with Web services and functionality built in. Add the info and how-to help you can get from MSDN™, and you've got a real, productive, ready-right-now Web development platform. For all things Windows DNA, go to msdn.microsoft.com/windowsdna

* Netcraft Survey, September 1999
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Microsoft Windows DNA

Where do you want to go today? Microsoft

PATRICIA KEEFE

This column hurts

I BARELY HEARD a co-worker last week ask me if the tendinitis in her elbows and pain in her forearms could possibly be signs of carpal tunnel syndrome — I was too busy gaping in horror at her completely nonergonomic setup. When she casually noted that she'd rejected a dropped keyboard tray, I urged her to give the tray another try and ticked off several other ergonomic suggestions. To hammer the message home, I followed up with a nifty explainer article lest she travel too far down the road to repetitive-stress injury hell.

Patricia Keefe is the editorial director of *Computerworld*. You can contact her at patricia_keefe@computerworld.com.

Carpal tunnel syndrome is real, and it stinks. Sometimes it hurts like hell. I know, because I have it, thanks to years of pounding oo nonergonomic keyboards while sitting at a nonergonomic desk. Even with hand surgery (one down, one to go) I know this problem isn't going to go away. But I'm hardly unique.

Which is why the U.S. Labor Department last week proposed regulations that would require many employers to correct workplace conditions that cause repetitive stress injuries. Yes, of course this will cost companies money, and I'm thinking there ought to be tax breaks for smaller companies. But businesses will find the cost of lost productivity, unfilled jobs, workers' compensation and mounting medical bills a lot more punitive than the cost of underwriting preventative measures. That comes to about $150 per year per workstation that's fixed, according to the Labor Department. The agency estimates that employers can save $22,500 for each musculoskeletal injury prevented.

Anyone struggling to find workers in a tight labor market should be paying attentioo — especially given the news last week that a tight labor market will continue at least through the first quarter.

Protecting the workforce already in place and ensuring, even eocouraging, its productivity should be a prime directive for all managers. And in many cases, fixing the problem isn't that big a deal. Even the minimal changes I've made to my workstation have paid big dividends.

Which is essentially what OSHA seems to be pushing, and what IT leaders should be advocating to their companies.

There's just oot much sense in implementing technology to boost productivity on one end while it bites the hands that operate it on the other. ◗

DON TAPSCOTT

Rule Britannica! Encyclopedia's site is a winner

IT TOOK TIME for the Encyclopaedia Britannica to remake itself for the Internet age, but it was well worth the wait. Immediately after Britannica.com Inc. put its 32 volumes oo the Web at oo charge (*www.britannica.com*), the site was crushed under what the Chicago-based company described as a "tidal wave" of activity. More than 10 million visitors oo the first day caused the site's servers to collapse. Britannica pulled the plug until it could boost capacity.

The Web site is now back up. The 44 million words of encyclopedia content is now supplemented by material from news wires and more than 70 magazines, from *The Economist* to *Esquire*. Other features include a guide by Britannica's editors to useful sites on the Web. It's really a quasi-search engine with two centuries of editorial judgment built in.

Don Tapscott is chairman of the Alliance for Converging Technologies. Contact him at don@tapscott.com.

James Strachan, a Britannica executive, says the Web site will help Internet users "read the world's headlines in the context of its history, cultures and evolution. It will offer the perfect antidote to the sound-bite culture."

They should do well. People trust the company's abilities to separate intellectual wheat from chaff. Britannica intends to make money from its Web site through advertising and related e-commerce activities. While Britannica's actions may have a last-gasp air about them, the free content formula has already proved successful for several other news and current affairs Web sites.

This is a fundamentally different business model for the company; it marks a shift from selling a good to a service. Fortunately for Britannica, demand for this service can't help but grow.

A decade ago, the company generated $650 million in revenue selling its encyclopedia door-to-door. If parents wanted to invest $1,200 in their kids' intellectual development, buying the Britannica was a smart decision.

Today, most parents think spending $1,200 on a networked computer is the better investment. I agree. The Internet is a factoid geyser. If you want to know Thailand's population or how wolves adapt to their environment, the Web is now the place to go.

But today's information consumer needs con-

text, not just content. In particular, students need to know how to authenticate, filter and synthesize the enormous volume of informatioo flowing over them.

For example, individuals and advocacy groups of all persuasions are building Web sites that pump out what really is propaganda cloaked as objective analysis. The number of such sites grows daily.

That's fine. I believe in freedom of speech, and the more points of view the better. But as our kids conduct research on the Web, they need a helping hand to discern what is credible and whose agenda is being advanced. Parents and teachers aren't always around, and I am glad Britannica is lending its trustworthy hand.

DAVID MOSCHELLA

HP's e-services strategy stands out from the pack

OVER THE PAST YEAR or so, I have written several times about how the overuse of the word *services* can easily make for confusing business communications. After all, when the same word is used for everything from broadband transmission to the maintenance of automated teller machines, blurred messages and outright misunderstandings are more likely to be the norm than the exception.

DAVID MOSCHELLA is an author, independent consultant and weekly columnist for Computerworld. Contact him at dmoschella@worldtalk.net.

So it was with a slight case of exhaustion that I have been listening to the rising drumbeat of e-services from Hewlett-Packard and its new CEO, Carly Fiorina. How easy would it be to tell if HP's e-services would be any different from the systems integration services of EDS, the apps-on-tap of Oracle or the giant services catch-all promulgated by IBM? More important, was there any way that HP's services message could possibly stand out from all the rest?

Well, if one listens carefully enough, there is. As Fiorina accurately noted during her recent Comdex speech, in many industries, we are rapidly approaching "the end of the pure product era" and heading into a future where cars, refrigerators, gas pumps, watches, elevators and really anything with a microchip can simultaneously function as both a product and a services platform. For example, HP wants to help build cars that provide navigation services, elevators that report the weather, PCs that monitor your health and watches that receive messages. It's a distinct and truly exciting services opportunity.

Thus, although so much of today'a e-services rhetoric sounds oumbingly similar, HP is actually pursuing a fundamentally different vision from the one now guiding IBM. As symbolized by a new logo highlighting the word "invent," Fiorina has promised a return to HP's roots in product and technology innovation. This strategy contrasts sharply with that of IBM — which I now ofteo refer to as IBS (International Business Services) — a company that increasingly has only a legacy interest in actual machines.

Yet, although it is heartening to sense a more focused HP, there are still some troubling undercurrents. In an industry dominated by highly specialized vendors, HP — like IBM and Digital before it — continues to extol the benefits of having all of the key hardware, software and services pieces. At Comdex, Fiorina heavily emphasized her view that HP lives at the intersectioo of the appliances, services and infrastructure businesses. Most of us learn at a young age what happens when you stand in the intersection. Too often, the search for synergy proves elusive.

Apparently, HP must have some similar doubts. How else can you explain the fact that HP's new emphasis on smart products has emerged almost simultaneously with the spin-off of its test and measurement business? Over the past 20 years, I've heard HP executives repeat countless times, often without any real evidence, that the company's long-term ace in the hole was the test and measurement division'a knowledge of the analog- and sensor-based world. Yet, ironically, HP has spun off Agilent at almost the very moment that the strategic valoe of these competencies has started to become widely apparent.

Still, of all the original American mainframe and minicomputer companies, HP is now the only one that remains fully committed to a primarily technology-based strategy. As Sun's Scott McNealy has often noted, services are usually where hardware companies go to die. HP has a chance to stand this message on its head. If smart products become the industry's oext big thing, services just might become the place where hardware companies go to be reborn.

READERS' LETTERS

Reasons behind Microsoft's workflow strategy

THE AUTHOR of "Microsoft Pursues Puzzling Two-Pronged Workflow Tool Strategy" [News, Oct. 25] needed to do some research.

He then would have known that the workflow applicatioo that will ship with Exchange 2000 was designed to facilitate small department-level workflow to automate simple tasks in another product called Team Folders. Exchange 2000 WebStore is going to be a data repository for unstructured data built around messaging.

Also, the workflow application that will come with Office 2000 developer is geared toward larger applications that will use SQL Server and some other WebStore technology as a structured data repository. It will be geared toward claims processing and such.

Microsoft is going to make sure that Exchange 2000 and the future WebStore technology will have many of the basic tools needed to provide knowledge management in the workplace.

Todd Myrick
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THE IDEA OF having different types of workflow products, one for processes associated with structured business applications (using a database) and the other for collaborative/administrative processes (using a messaging infrastructure) has been a fairly typical workflow design center for quite a few years.

Given the SQL Server and Exchange foundations to Microsoft's two offerings, this seems but a new expression of a fairly old concept. Should the resultant solutions not interoperate, then criticism would be warranted.

Simply to have multiple products would not seem an issue to confound developers, who fully recognize that no single solutioo or underlying architecture will be appropriate for every business need.

Chris Martins
Senior research analyst
Aberdeen Group Inc.

The expanding list of Y2K buzzwords

I ENJOYED Michael Cohn's column ["Hate Buzzwords? Try These New, Improved Models," News Opinion, Nov. 1].

My personal favorite for a new buzzword: Y2K reflux disease — the burning feeling that you missed something and the lawyers are unhappy.

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Spam: Old problem, new medium

I READ Dominique Deckmyn's article "Survey: Spam Rules Favored" [Nov. 1, *www.computerworld.com*] with interest, and I have one big question: Why doo't people attack with the same vigor those that call me on the telephone with unsolicited offers or those that fill my mailbox with offers? Why isn't there anti-junk-mail legislation or anti-telephone-offer legislation?

I doo't mean to imply that I like spam, but I do think the same rules ought to be applied. Quite frankly, I believe all the fervor over spam isn't from the populace as much as it is from the Internet service providers that want to protect their turf and control what marketing is done to their customers — in other words, to maintain their little monopoly as much as possible.

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COMPUTERWORLD welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Allan E. Alter, columns editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 875-8931; Internet: letters@computerworld.com. Include an address and phone number for immediate verification.

Windows 2000

We've changed our name . . .

As our readers' thoughts turn to Windows 2000 so, too, do we. Our webzine is now Windows 2000 Advantage (formerly Windows NT Advantage) And to keep pace with our reader community, we're offering a full slate of case studies, feature stories, Q&As with top Compaq and Microsoft executives, user perspectives, Windows 2000 analyses from our columnists and "Closer Looks" that focus on installation and migration issues.

Online This Week

Compaq's PCs are Windows 2000 READY now

Even though Windows 2000 hasn't yet been officially introduced, it has been thoroughly beta-tested by many users. Having worked closely with Microsoft on the operating system's development and testing, Compaq has already made its PCs Windows 2000 READY.

Quest for reliability drives Windows 2000 Build Labs

The quest for perfection never ceases at the Windows 2000 Build Labs, where they crank out one new "build" after another, day in and day out. The group has created a new version of Windows NT or Windows 2000 five days a week, 52 weeks a year since late 1989.

Browser-based approach smooths PC manageability

Compaq offers intelligent manageability, a built-in capability that enables users of its desktop, workstation and portable PCs to easily and effectively manage their network devices via the click of a browser.

Quickpoll Will Windows 2000 play an essential role in your company's success?

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Current results ▸

Base: 389 respondents

Microsoft

IT moves beyond Y2K

Millennium bug slowed spending, now IT catches up

By Chris McCann

The abbreviation Y2K has dominated the vocabulary and budgets of corporate IT departments for so long now that many organizations may find it strange to start thinking beyond 2000.

But with the rollover date a month away, post-Y2K plans are now part of the immediate rather than long-term future. And, after years of having to reallocate finances and energies toward the year 2000 "bug," companies are finally getting their budgets and personnel back.

Analysts say there's plenty to keep IT departments busy. To begin with, 53% of large companies say Y2K forced them to reduce spending in other key areas, according to a recent study from International Data Corp. (IDC).

Such figures suggest companies are now facing a daunting — and sprawling — to-do list. However, analysts say once companies take a good, hard look at both the status of their current systems and at company priorities, most will find that resources need to be channeled into a handful of precise areas as they shift focus from Y2K projects

"The first priority is clearly implementing or acquiring enterprise applications," says Tom Oleson, research director and principal investigator for year 2000 at IDC in Framingham, Mass

Gartner Group Inc. research director Dale Vecchio believes enterprise resource planning packages in particular will lead the way

Another leading concern for companies is the Web "E-commerce, e-commerce and e-commerce" tops the bill, says Andy Bochman, an analyst at Aberdeen Group Inc. "This is what's been delayed, if anything has, and this is where they'll be putting their money and energy"

Steve Torbe, PC product marketing manager at Compaq, also sees the Web as the top post-Y2K business priority "From my conversations with customers, I think the key thing they're saying is an issue is the influence of the Web," he says. "The Web doesn't just change their IT, it changes their whole business model"

Of course, with the upcoming launch of Windows 2000 on Feb. 17, another big concern for many companies will be upgrading corporate operating systems. Torbe believes most big corporations will wait until the second half of 2000 to deploy Windows 2000. That's partly because of delays to new IT strategies caused by Y2K, and partly because they will be working out how to handle the changeover ▸

For the full text of this story, visit www.Windows2000Advantage.com.

ADVANTAGE

The Web Magazine for IT Leaders Implementing Windows NT and Windows 2000 with Compaq Services and Solutions

▸ INTERNATIONAL NEWS

Certification gives users peace of mind

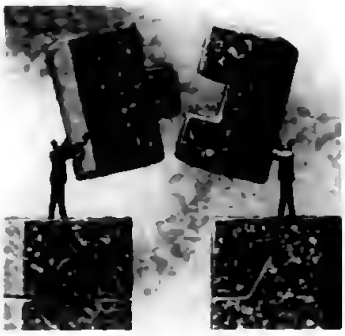
Compaq PC testing service saves valuable IT resources

By Stefanie McCann

Hamburg Mannheimer, the second-largest life and accident insurance company in Germany, didn't want to take any risks while rolling out new laptops to its employees. So the Hamburg-based firm enrolled in Compaq's PC Certification Testing Service, part of Compaq's PC Lifecycle Solutions.

The service allows customers to step away from the process of loading and testing software for their new Compaq client hardware, saving them valuable IT resources. Compaq formally launched the program in April 1999 for customers purchasing its Armada portable PCs, Deskpro PCs or Professional Workstation product lines. However, the company had been quietly performing this service for several large customers for some time prior to the official launch.

When customers select one of Compaq's new PC configurations, they can choose this service as a way to reduce their product evaluation and qualification cycle. Once the choice is made, Compaq takes the reins. It loads on to customers new PC units their entire software "image," whether it is customer-supplied or custom-designed by Compaq — including all software loads and third-party options that will be running on the PCs. Then Compaq does all the testing needed to ensure that the software is compatible with the new hardware, including third-party hardware options, and that it's up and running smoothly.



This process, depending on the test suite the customer chooses, is a big time-saver for IT departments. On average, a customer's internal IT departments would require more than eight weeks to do the same testing and qualification, with Compaq performing those functions the cycle time can be reduced by as much as 80% to 90%.

Compaq's PC Certification Testing Service is also useful for customers planning to migrate to Windows 2000, as this service can be used to reduce the migration cycle from existing hardware and operating system configurations to new hardware and Windows 2000.

"We'll test whatever the customer wants us to test. This is a 'custom' client service, each customer's requirements are unique, and we handle each one in a very exclusive way," says Jackie Dillemuth, manager of Solutions Marketing at Compaq. "Customers can turn to Compaq for this service when they upgrade and need assistance with their environment when testing Windows 2000."

User on the spot

For Hamburg Mannheimer, the decision to sign up was made when it bought 1,000 Armada M700 notebooks from Compaq. As part of that deal, Hamburg Mannheimer's Christel Mangelsdorff traveled to Compaq's headquarters in Houston for a week while Compaq tested her company's software on the new laptops.

During her stay in Houston, Mangelsdorff got a good impression of how Compaq operates while watching technicians testing her company's Kubus database product in both Windows 98 and Windows NT environments. "It was interesting to see how intensively notebooks were tested in the laboratory and how accurately software is tested," she notes. ▸

For the full text of this story, visit **www.Windows2000Advantage.com**

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Point of View

Compaq introduces new iPaq Internet Device

With the introduction of Compaq's new legacy-free iPaq Internet Device, Windows 2000 users will be getting a dedicated, top-of-the-line Internet companion that is uniquely designed to take full advantage of the reliability, manageability, security and ease of Internet access features of Windows 2000 Professional.

The announcement of this new product signals a major point of departure from the traditional PC for Compaq and the industry. The new Compaq iPaq Internet Device provides the right features for the Internet age in a simple and affordable format while still supporting personal productivity applications for business environments.

Designed to allow users to focus on usability, the legacy-free iPaq is network-ready with Windows 2000 Professional and Universal Serial Bus (USB) ports in place of ISA/PCI expansion slots and legacy ports. By eliminating legacy technology, iPaq reduces the potential for hardware and software conflicts while significantly lowering support costs. Additionally, the unique industrial design allows access to memory and hard drive through a removable side panel, keeping deployment, maintenance and operating costs low.

The iPaq's design also allows for a 75% smaller footprint than standard commercial desktops. The combination of this new and innovative hardware design coupled with the reliability and manageability features of Windows 2000 will significantly reduce operating costs for customers. ▸

For more information on the iPaq line, check out **www.compaq.com/products**. To pre-order on the DirectPlus Web site, visit **www.direct-plus.compaq.com**.

GO

PAUL DONNELLY

Fix what's broken in the H-1B system

THE H-1B DEBATE is misconceived. Because most H-1B holders intend to remain in this country as immigrants, green cards — not guest worker visas — are the way for U.S. employers to recruit the just-in-time skilled workers they need.

So why isn't that the focus of the H-1B debate?

In 1990, Congress provided U.S. employers with more than enough immigrant visas to recruit from a global marketplace: 140,000 per year. Not once have all 140,000 been used.

So why are IT lobbyists hollering about a terrible shortage of skilled workers and a compelling need to increase the number of visas available?

PAUL DONNELLY is a media consultant who specializes in immigration issues. He was an aide to the principal author of the Immigration Act of 1990, former Rep. Bruce A. Morrison (D-Conn.). Contact Donnelly at www.immigrationreform.com.

Because, like lawyers and politicians, they would rather perpetuate a problem than solve it.

What punctures the balloon logic of H-1B supporters is that last year, 63,000 permanent visas for employment-based immigrants went unused. The year before, the number was 50,000. Some shortage. Why aren't IT lobbyists working to get green cards for the workers they claim to value so much?

According to statistics from the U.S. State Department and the Immigration and Naturalization Service (INS), the number of employment-based immigrants has dropped: There were 117,000 in fiscal 1996, 90,000 in 1997 and 77,000 last year. Meanwhile, H-1B guest worker visas have soared: There were 55,000 in 1996, and that number hit the 65,000 visa cap in 1997. It climbed from there to last year's 135,000-plus — including at least 20,000 unauthorized guest worker visas issued by the arithmetically challenged INS.

Face the facts: Most H-1B visa holders are really permanent immigrants disadvantaged by temporary visas. Virtually all employment-based immigrants get green cards while already working in the U.S. on temporary visas. Most of the 77,000 who got visas last year (barely half of the available number) came out of the 50,000 and 60,000 H-1Bs issued five and six years before. So what's going to happen a few years from now, when we've nearly doubled guest worker visas without any way to deliver permanent residency?

Let's fix what's broken. Employers care about hiring the workers they want when they need them, right? H-1Bs are easier to get than green cards because regulations block skilled immigration. Yet the regulations are a joke, neither protecting U.S. workers nor promoting skilled immigration. We have a system run by bureaucrats for the benefit of lawyers.

Why not use market forces instead? What reconciles supply and demand in a market system is price. Nobody would spend $15,000 on a lawyer to hire somebody they didn't need (unless, of course, they got that investment back in lower wages). An employer willing to make a legally binding statement that it isn't undercutting U.S. workers should be able to sponsor a new hire for a green card by simply making a substantial private-sector investment in educating and training U.S. workers — through in-house training or a scholarship fund — thus importing skilled immigrants and improving the U.S. workforce.

Employers get what they claim to want: access to a global marketplace for skilled workers. U.S. workers get the upgrading of skills they need. And the new hires get green cards to become what they want to be: new Americans, not indentured servants. ▶

WILLIAM M. ULRICH

Y2K's close; we're still not ready

INDUSTRY ASSOCIATION and government spokesmen have proclaimed the Y2K problem dead.

People believe this because they ignore published status reports to the contrary, see no personal connection to the problem and listen to pundits while doing little research for themselves.

But when problems emerge, companies and governments will take the brunt of the criticism. Assessing the reality of the situation will allow organizations to respond to the public relations challenges ahead. Reality is different from what the media tell us.

WILLIAM M. ULRICH is president of Tactical Strategy Group Inc. and co-founder of Triaxsys Research LLP. Contact him at tsgbw@erols.com.

In September, Cap Gemini America, an information technology consulting firm in New York, found that 44% of major companies wouldn't have their mission-critical systems compliant by January. A *CIO* magazine poll found that 81% of large companies weren't yet finished and that half the companies surveyed had no contingency plans. A National Federation of Independent Business study found that 40% of small businesses had done nothing about Y2K.

Where progress has been made, work completed to date remains in question. According to independent validation and verification (IV&V) studies by SEEC Inc. in Pittsburgh, the average mainframe or midrange system contains 510 date-related errors after remediation. A second study in February by Reasoning Inc. in Mountain View, Calif., found between 100 and 1,000 bugs in similar samplings. An unrelated study by SriSoft Corp. in Diamond Bar, Calif., in October discovered that testing catches 30% of Y2K bugs, while IV&V uncovers another 40% to 45%. This leaves 25% of the remaining bugs in a best-case scenario.

Statistics drawn from government hearings and Web sites paint a more detailed picture. Only 13.5% of small and midsize chemical and petroleum firms have completed Y2K preparations. The Food and Drug Administration said 4,053 high-risk biomedical devices remain noncompliant. More than half of all health care providers won't be ready. And 70% of schools are unprepared.

According to calculations found in a report by researcher Warren Bone at New York-based Westergaard.com Inc.'s Web site (*www.wbn.com/y2ktimebomb/*), only 75% of federal mission-critical systems will be finished by January, and the status of nonmission-critical systems remains unclear. Other reports found 13 states at risk for failures in federal benefit programs, 25% of U.S. counties with no Y2K plan, 63% of 911 call centers unprepared and Medicare provider payments facing delays.

Even best-case scenarios are imperfect. The Social Security Administration (SSA) began year 2000 efforts in 1989. In July, according to the Information Systems Accounting & Information Management Division, SSA found 1,565 year 2000 errors in mission-critical systems. Only 44% of these had been fixed as of October. SSA is still checking data and finalizing contingency plans.

What does this mean to consumers? In statements made in early November to CBS News, the State Department inspector general said, "80 countries are at moderate to high risk, and there will be failures at every economic level, in every region of the world." Nick Gogerty, an analyst at London-based International Monitoring, predicted in October that Y2K would lead to $1.1 trillion in damages worldwide, not including those from litigation and insurance costs. These costs, along with many inconveniences, will affect us next year.

Why is the government telling us that most industries are 100% Y2K-compliant when bug-free systems are a myth? The answer is that the government and selected industries don't want people to panic. But when things go wrong, people will demand answers.

What can organizations do when problems strike? First, consider that 80% of your customers expect no year 2000 problems at all. Second, don't believe your own industry hype about 100% compliance. Third, be polite and let them know we are all in this together — for the long haul.

Most important, when future large-scale challenges arise, consider your industry's posture. The unrealistic Y2K performance expectations set by industry associations are unachievable. Finally, see if any of those high-priced public relations directors want to work your customer hot line in January. They may learn something about manipulating perceptions about matters they barely understand. ▶

SEE WHAT THE INNOVATORS ARE DOING TO EXTEND THEIR ENTERPRISE INFORMATION TO EMPLOYEES, PARTNERS AND CUSTOMERS OVER THE WEB

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BUSINESS

NO LIMITS

Electronic communications networks charge that the limits that keep them from trading blue-chip stocks on the the NYSE are unfair. They're fighting for more openness, even if it means becoming virtual exchanges themselves. ▸ 36

ROAD WARRIORS

Consultants and contractors will make up as much as 50% of the IT workforce in the future, according to Gartner Group. Many will practically live on the road. One consultant shares tips on how to stay productive on the road, so the work doesn't start again when you get home. ▸ 37

SECURITY NEEDS

There's no one-size-fits-all solution to information security. Entertainment companies worry about piracy, financiers fret about data integrity, but everyone has a common need for vigilance and a comprehensive security policy. ▸ 38

IT MERGERS

When going through a merger, decide whose strategy will predominate, whose technology will survive, whose organization will persevere and whose leadership will endure, Jim Champy advises. Just avoid holy wars over IT architectures ▸ 42

MERGING ERP

Blending ERP systems or components in a merger requires a lot of work. You need to include users from the beginning, meet extensively with executives and support teams and build an infrastructure to support the merged or new system. On top of that, you have to figure out what to do with the old data. ▸ 44

CAREER STALL

A lack of business knowledge can leave you stuck in middle management. Here are some tips on how to prevent this career stall, by increasing your corporate awareness and adding business skills. ▸ 50

IT ACCOUNTING

Generally Accepted Accounting Principles are changing to accommodate IT. As a result, IT managers have to pay closer attention to what IT projects are supposed to accomplish and how to view costs. See Business Quick-Study. ▸ 52

CAREER ADVICE

Career Adviser tells an IT job-seeker who's skilled in Cobol to consider getting training in Java and CORBA, which make it possible to do programming over old and new platforms. And an IT pro with a background in messaging-infrastructure design should get some training in Wireless Markup Language. ▸ 53

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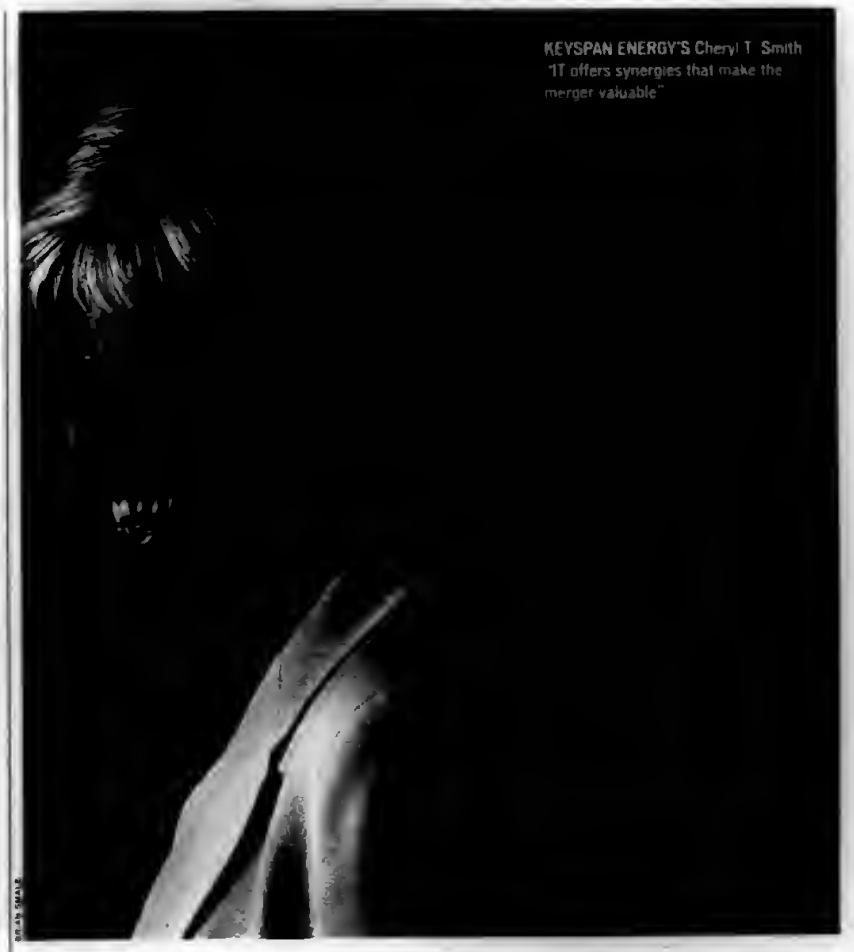

KEYSPAN ENERGY'S Cheryl T. Smith "IT offers synergies that make the merger valuable"

HOW TO SURVIVE A MERGER IN IT

CHERYL T. SMITH (above) says IT leads the way in most mergers, which makes it possible for IT staff to survive. IT is often critical to a merger's success. But duplication of efforts can cause you to lose your job. To protect yourself, don't resist change, and look for solutions to problems wherever possible. Smith advises CIOs to help staffers by being decisive and communicating clearly.

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Trading Nets Seek More Stock Access

ECNs want to trade all NYSE-listed stocks

BY THOMAS HOFFMAN
NEW YORK

THE CYBERBARONS who run the alternative trading networks that handle 30% of the trades across Nasdaq Stock Market Inc. in New York want to do more. A lot more.

"There have been decisions made by the NYSE that have been self-serving" and prevent electronic communications networks (ECN) from executing a good chunk of the stocks that are listed on the self-regulated New York Stock Exchange (NYSE), said Art Pacheco, CEO of Strike Technologies Inc., an ECN in New York.

HOUTKIN: NYSE rules are restrictive and self-serving

ECNs such as Chicago-based Archipelago Holdings LLC and Instinet Corp. in New York were designed to electronically match stock orders between buyers and sellers. Though they have gained momentum in the past few years, they are currently prohibited from trading many blue-chip stocks that are listed by the NYSE.

That's because the Big Board has a standard, known as Rule 390, that prevents any organization from trading in over-the-counter markets any stocks that were listed with the NYSE before 1979. Although 70% of NYSE-listed stocks are exempt from Rule 390, ECNs are still unable to handle the other 30% of stocks that make up half the Big Board's daily volume. Examples of those stocks include Detroit-based General Motors Corp. and Cincinnati-based Procter & Gamble Co.

As the rule stands, ECNs would be able to handle those stocks if regulatory bodies such as the Securities and Exchange Commission (SEC) granted them approval to become stock exchanges, a process that several ECNs are said to be exploring, experts said.

"This requires [SEC Chairman Arthur Levitt] to say that Rule 390 is gone," said Harvey Houtkin, president of All-Tech Investment Group Inc.'s Attain ECN in Montvale, N.J. "If the regulators don't do their job," Houtkin said, "we're going to be [doing nothing but] talking about this for years to come."

Houtkin was among the CEOs of the nine ECNs who gathered for a first-ever roundtable discussion at the Financial Technology Expo in New York two weeks ago.

A spokesman for the NYSE said the exchange has been discussing the rule with the SEC. In a September speech Levitt made at Columbia University Law School in New York, he said ECNs "must be able to compete with traditional exchanges ... free from ... unreasonable barriers." But he added that the SEC "will not shy away" from taking actions against ECNs that fail to meet regulatory standards for how and when they can execute trades.

The use of sophisticated technologies by ECNs in the past few years has dramatically lowered the cost of executing stock trades while speeding up the process. Many industry experts believe that the kingpins who control the majority of transactions on Wall Street could be replaced by faster and nimbler electronic rivals.

"If you're not agile, if you don't have the [proper] technology, it's going to be very difficult to compete with" ECNs in the future, said Mark Yegge, CEO of Clearwater, Fla.-based ECN NexTrade.

The ECNs "are forcing the NYSE and Nasdaq to move faster" with their electronic trading capabilities, said Bob Iati, an analyst at TowerGroup in Needham, Mass.

But Iati and others also said they believe that the SEC and other regulators will monitor ECNs' trading activities much more closely next year as the weight of year 2000-related burdens are lifted. "It's going to happen. It's just a matter of when," said Marty Lippert, CIO at Royal Bank of Canada in Montreal.

SEC Seeks Tighter Rules For Dot-Coms

BY THOMAS HOFFMAN

The Securities and Exchange Commission (SEC) is asking accounting watchdogs to tighten their controls on the way Internet-based companies book their revenues.

The SEC made this request after finding that some Web-based companies have been reporting the full revenues for software and other products that they are merely distributing for other companies, instead of tallying up just the distribution fees they have received.

In a letter sent Oct. 18 by SEC chief accountant Lynn E. Turner to the Financial Accounting Standards Board (FASB), Turner wrote that the enhanced revenues are significant "due to the importance often placed on the revenue line in the valuation of Internet stocks."

The agency has also found that some Internet firms have been booking as revenue advertising they exchanged with other Web firms under barter-type agreements. In addition, some cybershops are wrongly reporting shipping and handling costs as revenue, the agency alleges.

Timothy S. Lucas, director of research and technical activities at the FASB in Norwalk, Conn., the recipient of Turner's letter, said the group's emerging issues task force has met to discuss the issues outlined by the SEC and has "agreed to take on most of those issues" but has reached no decisions.

Chevron: Online Info, With a Human Touch

Web, call center aid gas station owners

BY CRAIG STEDMAN

When Chevron Corp. was developing a new Web-based system to give gas station owners online access to financial data and other information, it didn't forget this: Sometimes people like to talk to other people.

The system, which was launched last spring, should save the San Francisco-based company's retail-marketing unit more than $10 million per year by letting franchisees answer their own questions about their accounts online, according to Dave Clementz, president of Chevron's information technology arm. That will reduce the need for Chevron employees to take phone calls, send faxes and visit the stations, he said.

But the petroleum company isn't completely doing away with the human touch. While the system has already helped Chevron's reduce its retail marketing head count by 25%, Clementz said, some workers will stay in the field to continue making face-to-face visits with station owners.

The company also set up a new call center, staffed by about 18 employees for 12 hours each day, to support the new online system. The workers on the phones can provide guidance on using the Web site, but they will also look up account records or other information for callers.

"The first line of contact we want to give [the gas stations] is the Web," said Eric Parnell, project manager for the online system. "That's the most cost-effective channel. But sometimes it's not enough."

CLEMENTZ: The new system cost about $10 million

Chevron isn't the only company to make that discovery.

For example, Charles Schwab & Co.'s brokerage customers now process more than 60% of their stock trades online. The number of employees at a typical branch office has been cut from 12 to six or seven, said Lonny Nathanson, director of sales and marketing systems at Schwab.

But the San Francisco-based company has increased the number of its brick-and-mortar offices by 50% during the past four years, he added. "You want [the offices] to be there when a customer wants to talk to a human being," he said.

Chevron first demonstrated its Java-based system at a conference of its retailers late last year. Some attendees who test-drove the system "took to it very well," Clementz said. But others weren't as experienced with PCs. "They need some real hand-holding," he said.

The Web-based system and new call center cost Chevron about $10 million, Clementz said. The system, known formally as the Chevron Retailer Alliance, stores information in an Oracle database running on a Sun Microsystems Inc. Unix server. Users are linked to the database via Sun's NetDynamics application server.

Financial records are fed into the database from a mainframe, and users can also look at information such as manuals and marketing brochures. Chevron will add the ability to place fuel orders online early next year, Parnell said.

More than 1,000 of Chevron's 2,500 retailers use the system now. But Parnell said the call center still gets more than 400 calls per day, including some from station owners who haven't logged on to the Web yet.

On the Road Again: Lessons From a Mobile Contractor

Staying productive away from the office is a challenge

BY JULEKHA DASH

According to Gartner Group Inc., by 2002, consultants and contractors will make up as mnch as 50% of the IT workforce at organizations with $1 billion or more in revenue.

That means more and more information technology workers will spend their lives on the road, supporting remote workplaces and facing the same problems road-warrior sales and executive types are used to.

So how does a mobile contractor stay productive?

We asked **Shaun Walter**, who just spent eight months flying out to support Bell Atlantic Corp. systems in 30 mid-Atlantic airports and is just beginning a six-month assignment at Milwaukee-based Manpower Inc., building and upgrading Unix servers for 105 Manpower branch offices.

The assignment means three to five site visits per month to Manpower facilities around the continental U.S., in addition to a monthly trip home to visit his wife in Philadelphia.

WALTER uses some of his airport downtime for studying and planning

Q: How do make your time in the airport productive?

A: I generally study. For the last year and a half, I was working oo my [Microsoft Certified Systems Engineer] certification using study guides and computer-based training courses on my laptop.

I also do a lot of planning, for a specific site rollout or staff scheduling. I also work on [status] reports.

Q: Do you do most of your work off-line?

A: I download as much information as possible, but sometimes I need to send an update via e-mail or download updated information from the corporate server.

Q: How do you connect to the Web when you're traveling?

A: I use data ports [on pay phones], but finding one [in the airport terminal itself] is spotty at best. At most airports, you have to go to an airline's "club" to use a data port. USAir has just installed jacks in their new planes. A lot of airlines say this is an important feature, but they're just implementing it now.

Q: How can you find a quiet place to work?

A: The quiet period in an airport, though it differs from airport to airport, is between 10:30 [a.m.] and 12:30 [p.m.].

At some airline clubs, you can rent a small area and have a phone, data port, faxing, shipping and delivery services. You can even rent a conference room and have folks either meet you there or have a teleconference. [US Airways Group Inc., for example, offers a workspace in Philadelphia International Airport for $40 to $70 per hour, depending on the size of the room.]

Q: Where do you work if you miss a plane?

A: Denny's, small coffee shops, Dunkin' Donuts. These status reports have to he updated constantly. The last thing you want to do when you get home after an 18- to 20-hour day is work.

Q: What type of cellular phone and pager services do you use?

A: I have the old Motorola 650 flip-phones. But I've also used the AT&T 925 and Lucent ISDN 8510T. You want something that provides at least 18 hours of standby time. For pagers, I use the Skytel service because there are a number of ways to send the message. You can dictate the message to the operator or send an e-mail message. Or you can go to their Web site and type in the message with a [personal identification number] and send it yourself.

Q: What's the first piece of advice you'd give a new road-warrior contractor?

A: Make sure you have good credit. Some [new contractors] are very young, 19 or 20, and don't have any credit history. I know of some [contractors] who couldn't travel unless the company gave them an advance. It doesn't help if you don't have good credit if you're stuck at 11 o'clock at night and the only available hotel is $220 a night. ◗

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Three Industries, Three Security Needs

If your goal is to boost protection of your company's data, first you must know the security problems in your industry

BY DEBORAH RADCLIFF

A WHILE BACK, a credit-card company was being blackmailed by someone who claimed that he had hacked the company and was standing ready to kill its servers. So the company called on information security consultants at Para-Protect Services Inc. in Alexandria, Va.

"The client's primary concern was about allowing credit-card transactions on the second-largest shopping day of the year," says Ken van Wyk, vice president and chief technical officer at Para-Protect. "But the real issue is: If somebody had compromised the back-end systems that do funds transfers and store consumer records, then the main issue would have been integrity."

Consumer Confidence

All of which would lead to lost consumer confidence in the credit-card company, which is something financial institutions simply can't afford. But if the industry were different, the company's information security priorities would be different.

While the financial industry worries about integrity and customer confidence, another industry, manufacturing, must protect against theft of intellectual property. Meanwhile, the entertainment industry is wondering how to prevent piracy of its products on the Internet.

There is no one-size-fits-all solution to information security. Each industry, with its separate information protection needs, calls for different security practices. And it's those protection needs in your industry that will help you shape your information security.

"Those three verticals have the right combination of technology, money and paranoia," says van Wyk. By paranoia, van Wyk means that executives in each of the industries understand the value of what they're trying to protect.

Because consumer trust is the financial industry's biggest asset, banking and investment firms should, above all else, protect customer accounts from unauthorized funds transfers, according to Paul Raines, vice president of electronic security at the Federal Reserve Bank of New York.

"Banks want to protect the assets of their customers. There's a reputational risk if they don't," Raines explains. "If consumers felt that certain large banks can't protect their assets, they may feel the other banks can't either. So banks need to be diligent for the health of the industry as a whole."

For this reason, banks, and especially the Federal Reserve, are highly regulated and much more security-conscious than most other vertical industries, according to Ian Poynter, president of the computer security consulting firm Jerboa Inc. in Cambridge, Mass. "Banks have regulatory issues to prevent fraud. They follow procedures."

Authentication

Now that banks are moving to Internet-based transactions, they must also ensure the security of their Web servers and the information they store, along with providing secure transport of customer information over the Internet.

CDNOW'S MICHAEL KRUPIT: "The hard part is getting vendors and retailers [in the entertainment industry] to agree on a common technology standard for watermarking"

"Good authentication mechanisms, firewall configuration and encryption are especially important in online banking," Raines explains. These same measures go for internal security as well, he continues, especially in light of the 1999 survey by the FBI and San Francisco-based Computer Security Institute, "Trends in Intellectual Property," which reports that the vast majority of computer security breaches occur inside the firewall.

In fact, an insider has been accused of e-mailing software code from San Jose-based Cadence Design Systems Inc., a $1.2 billion maker of electronic design software, to start-up competitor Avant Corp. in nearby Fremont, shortly before he quit Cadence to work at Avant. In 1997, Cadence filed suit against Avant claiming that the Avant product in question even included the same designer typos as the Cadence product.

The Cadence case illustrates that high tech is a dog-eat-dog industry. Therefore, protecting intellectual property — such as in research and development information, plus product designs and customer information — is of utmost importance.

Protection Is Paramount

"Protection of our information assets is paramount," explains Rich Cower, information security analyst at Intel Corp.'s Online Services Division. "But the difficulty is that this is a web of business. Intel has business connections all over the world to suppliers, contractors and others. Protecting your assets in an environment like this is especially tricky."

That's why access controls are key, says van Wyk. Developers should access information related only to their products. Ditto for vendors, he says. Thus, van Wyk advises all high-tech companies to separate servers if necessary, especially those in research and development and other laboratories where free-sharing of information takes place. And, he says, install firewalls in all servers with connections to the outside and close off unused ports on corporate intranet and extranet servers.

But Poynter says he finds that a tough sell because developers don't like anything cramping their style.

Cadence spokesman Mike Sottak says he agrees, adding, "Our software developers are artists. To be overly restrictive [with security] could have a potential negative backlash."

Because of such personnel issues, Intel puts a lot of emphasis on employee awareness and collaboration with its vendor partners. Yes, Intel has all the technical security bells and whistles, but that can protect a company only so much. So Intel, through employee orientation, newsletters and spot checks, teaches its employees that "security is everyone's job," Cower adds.

But with Intel's e-commerce activity growing, the company also faces the same problem as companies in finance and entertainment — the Internet.

In fact, entertainment may have the most to lose in the Internet age. Online music and video outlets must not only worry about protecting customer transactions, but also face new forms of piracy thanks to digital compression technologies like MP3.

"Piracy hit the music and video industries long before the Internet," says Michael Krupit, chief development officer at the online music and video retailer CDNow Inc. in Fort Washington, Pa. What's different, he says, is these products are now digitized. The solution? An up-and-coming encryption application called watermarking, which embeds encoded algorithms in a song that would allow the song to play only with the buyer's nontransferable online player.

"The hard part is getting vendors and retailers to agree on a common technology standard for watermarking," says Krupit. And as retailers wait for it, digitized music sold over the Internet is pretty much up for grabs after the sale is made. "Once you own the music file, you own the file," he explains.

Whatever the industry, vigilance is key, says van Wyk. And, although their technical needs differ, every industry must follow some of the same basic security steps, he adds. They must all develop a security policy, test networked systems and Web services, patch operating systems, plug ports and retest periodically. ◗

Radcliff is a freelance writer in Northern California. She can be reached at derad@aol.com.

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WORKSTYLES

What It's Like to Work at . . . Patagonia

Interviewee: Mike Busch, director of information services
Company: Patagonia, an apparel maker that specializes in recreational sportswear; a division of Lost Arrow Corp.
Main location: Ventura, Calif.
Tenure with the company: "I've worked for Patagonia in some form or fashion since 1981. I was an [independent] IT consultant for many years. I came on board full time in 1995."
Number of information technology employees: 23, including 15 in Ventura and others in Reno, Nev., Paris and Japan. There are also three to four contractors at any given time
Number of employees (end users): More than 1,000
How most employees get to work: "They all surf down the coast or come in on skateboards. . . . Not really; most come by car. Most of the IT employees live 20 miles or more from the office."
Dress code: "We don't have one. In the summer, they're usually in shorts and sandals or no shoes or whatever. And they absolutely wear a lot of Patagonia clothes."
Workday: Staggered hours, between 6:00 a.m. and 1:00 a.m. "The ones who work late and early are mainly the operations staff who ensure that our nightly jobs are completed successfully."
What do you look for in IT employees? "We look first for a culture fit. You might be superstrong in IT skills, but you also need to fit in. We want to influence other businesses to use practices that are less harmful to the environment, and we donate a lot of money to environmental causes."
What's unique about IT at Patagonia? "We're in several different businesses: We have a catalog business, retail stores, an Internet business, a wholesale business, and we're global."
How long does it take new staff members to learn all the systems? "We have a pretty long learning curve, so we specialize individuals into different areas, but we try to give everyone some information about each application. We think it takes six months to get comfortable in a few applications, but about a year to get comfortable with all of them. We're trying to shorten that amount of time."
Kind of offices: "Everyone is out in the open, even executives. Nobody has a private office – the owner and CEO, his wife and their assistant are together in one room, and that's the closest thing here to an office. We don't have any cubes at all."
Desks: "All of the furniture here is made from recycled materials."
Must people carry beepers? Cell phones? "No, because of the coverage we have with staggered hours."
On-site day care? "Yes, we have a very popular day care center, for infants through elementary school age. At noon, the cafeteria is full of parents having lunch with their kids."
In-house cafeteria/food service: Yes; cost of meals is partly subsidized by the company. The menu features "healthy foods, in keeping with the company culture."
Other on-site amenities: "Almost all of our rest room facilities have showers, so you can go out running or surfing on your lunch hour and take a shower afterward."
Surfing on your lunch hour? "Yes. The first thing you see when you walk into the lobby is a pile of surfboards. About 200 yards from the office is a great surfing spot."
The one thing everyone complains about: "The company changes a lot. You have to embrace change."
Little perks: Discounts on company products, plus reciprocal discounts with other sporting goods vendors; a retail store on campus.
Would employees feel comfortable e-mailing the CEO? "Oh, sure."
Quote: "One of the cool things about working here is you have the opportunity to be exposed to a lot of technologies. Not that we embrace it all, but we are exposed to it all – the Web, Windows NT, AS/400 and data warehousing." – *Leslie Goff*

JIM CHAMPY

Advice to merger makers

MERGERS ALWAYS LOOK GOOD on paper. Making them work is another story, and the management of information technology is increasingly central to a merger's success. Wall Street is alert to this reality. Look at the high premiums going to the telecommunications megacompanies vs. the relatively low margins accorded the megabanks formed during 1999's rush to amass market share. Both are information-intensive businesses, but the particulars differ considerably. Let's look at each in turn.

Organic growth in the telecommunications industry, driven mainly by cellular technolngy and the Internet, is almost assured. The reasoning behind the urge to merge is clear: Consolidate and build massive networks and computing capacity. So the Street rewarded the merger of WorldCom and MCI with a considerable stock-price appreciation this year. In the end, the merger of telecom is more a merger nf technology infrastructures than of people. The principle risk is that the acquiring company could pay too much for the infrastructure of the acquired.

Putting two banks together is riskier. Three factnrs govern success or failure: First, the banks' technology operations must be consolidated to produce the cost savings that most mergers are expected tn produce. Second, custnmer service mustn't erode during the transition, or market share will be lost. Third, the newly fnrmed bank must move to the future of electronic banking. I believe that the modest appreciation of the shares of the NatinnsBank/-Bank of America merger reflects the Street's concerns with these risks.

A successful combination in any industry, though, means addressing four IT issues early in the process:

1. Whose strategy will predominate?
2. Whose technology will survive?
3. Whose organization will persevere?
4. Whose leadership will endure?

Here's my advice on these issues.

Don't fall into the trap of accommodation, like choosing one technology, one person and one facility from each side. This approach can make people feel good temporarily, but it often leads to disaster. Given the pace of technological change, it's highly likely that neither company has what the newly formed company needs. That has been my experience with the mergers of many insurance companies and health care providers.

Don't be lulled into believing that the sole objective of a merger is to gain market share or economies of scale. That's just Act 1. Industries like telecommunications and banking mainly involve commodities. Winning will take more than scale and low costs. IT — especially digital marketplaces — may eventually provide the answer. So begin working on this immediately.

Don't get into a holy war about whose technology architecture is superior. I experienced this recently with two merging companies that had selected different platforms for their e-commerce businesses. In the end, neither company had the right architecture. Moreover, when war is declared, business leaders don't understand what the conflict is about, and IT managers are once again perceived as being inward-looking.

Consider building a whole new technology infrastructure that will allow you to consolidate IT operations from the companies that are merging – and from future acquisitions. This will allow you to get nn with consolidation immediately, rather than living immersed in debate about whose infrastructure will survive. That was a great secret in NationsBank's early and successful growth-by-acquisition strategy.

Winning will take more than scale and low costs.

If this is your first merger, don't assume that the CIO who has brilliantly run a dependable IT operation is the best person to lead the new one into the future. Too often, executives put someone in a leadership position because he is trusted. Past performance is only one indicator, although an important one, of what someone may do in the future. It takes a real Solomon to make the merger of two IT organizations work — to find the talent in both and tn decide on the technology and people to lead a merged company into the future. It will also take great IT and business talent to produce Act 2 of today's merger activity: the creation of customer and shareholder value beyond the cost savings of consolidation.

Jim Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. He can be reached at JimChampy@ps.net. His newspaper columns are syndicated by Tribune Media Services.

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WHEN Merger HITS ERP

ERP projects are tough enough, so how do you keep going when your company is acquiring or merging with another? Pay close attention to the data and your people

By Deborah Radcliff and Alice LaPlante

MIKE MURPHY faced the dreaded enterprise resource planning (ERP) systems merger when his company, Allied Holdings Inc., purchased the automotive services division of Miami-based Ryder System Inc. in late 1997.

"We had a whole new set of assets we didn't know anything about. I felt a bit of uneasiness," says Murphy, president of Link Information Systems, the information technology arm of $1 billion Allied.

At the time, Murphy was converting Decatur, Ga.-based Allied's antiquated human resources and accounting systems to ERP software from PeopleSoft Inc. in Pleasanton, Calif. All of a sudden, he needed to contend with a handful of Ryder's homegrown applications. Murphy felt sure the new ERP applications would scale up to support Ryder's 5,500 users. But could they support the merging of two corporate cultures?

Murphy needn't have worried so much. By including users in the software selection process and empowering them with information, training and choices, the rollout pulled together information resources and unified the companies at the very cultural level Murphy was so worried about.

"The users could see the process and felt in control of their own destiny," he says.

Including users is just the beginning. Today's megamergers call for tough measures in the merging of valuable accounting, human resources and manufacturing data.

Building blocks for a successful ERP merger include holding endless meetings with executives and support teams and building an infrastructure to support the merged or new systems. Then there's that sticky issue of what to do with the old data: Do you clean and load it into the new ERP system? Or do you back it up and hope the hit on production will be gentle?

Ah, the dreaded ERP systems merg-

Mania

Crucial Success Factors In an ERP Makeover

- Build an executive management planning committee that believes in integration and efficiency, understands ERP, supports the cost, demands payback and champions the project.
- Everyone involved should want to remove all obstacles to working together.
- Align everyone's interests by giving midlevel management hands-on responsibility for change, schedule employees for training, allow employees to give feedback and provide honest answers to their questions.
- Build a project team from nontechnical users and managers and entrust them with decision-making.
- Set realistic expectations in the areas of cost, change management, payback and consequences of project failure.
- Constantly communicate with teams and and users.

SOURCE: HAL ZESCH, VICE PRESIDENT OF BEST BUSINESS PRACTICES AT VALERO ENERGY CORP., IN A PRESENTATION HE DELIVERED AT SAP AG'S USER CONFERENCE, SAPPHIRE '99, IN SEPTEMBER

er. ERP implementation veterans know how much rides on a successful joining of financial, human resources, customer and manufacturing data, especially in closely competitive industries.

"If you could not send out your invoices, you would kill your cash flow. And that could kill your business," says Hal Zesch, vice president of best business practices at San Antonio-based Valero Energy Corp., an independent energy refining and marketing company with 1998 revenue of $5.5 billion.

Turning Lemons Into Lemonade

Valero is what you might call an acquisitive company, having snapped up a refinery from Fairfax, Va.-based Mobil Oil Corp. last year and buying three refineries from Houston-based Basis Petroleum Co. in 1997.

Thus, Zesch and others who work in

Continued on page 46

merger-centric industries know to do their homework before embarking on an ERP integration. They also know that involving senior management, midlevel management and users will better align ERP decisions with the company's overall business strategy.

"First, understand what you're going to get with the acquisition: People? Hardware? Are you acquiring the parent company or just part of the company? Will part of the new acquisition get divested?" says John Crary, CIO at Lear Corp., a $12.1 billion international maker of interior auto parts based in Southfield, Mich. Lear has had a spate of acquisitions over the past three years. Most recently, the company bought United Technologies Automotive Inc. in Dearborn, Mich., in May. It also picked up the seating business of Delphi Automotive Systems in Flint, Mich., last year.

Many of Crary's questions can be answered only by senior management, and the solutions can be delivered only by midlevel management. This stresses the need for IT managers to keep in close communication with all levels of leadership during an ERP merger.

After these first questions are answered, myriad decisions follow, the most important being what to do with the ERP system you inherit. Crary puts it this way: "Once you catch it, what are you going to do with it? Will you meld their ERP package with yours or leave them separate?"

In Lear's case, most of the company's 330 manufacturing sites (spread out in more than 30 countries) use different manufacturing processes. This, Crary says, calls for separate manufacturing-specific ERP packages. So, in many of these plants, it made sense to leave well enough alone.

"What we're trying to do is take advantage of synergies — of investments already in place, of the specific nature of products being manufactured — or because success was already there," he explains. "In those cases, there would be no need to make a change for change's sake."

The obvious problem with this tactic is how to share data with other plants or the home office. For that, Lear has developed in-house applications. Its technical team also used some commercially available software to manage and convert some of the manufacturing data into an automobile industry-standard format. And, for remote manufacturing sites, nonclassified data is even pushed to the home-office systems over the Internet "because the Internet is available, handy and cost-effective," Crary says.

For corporate needs, Lear standardized its PeopleSoft human resources application and its financial reporting application from Hyperion Solutions Corp. in Ann Arbor, Mich. But the plants themselves use a variety of manufacturing resource planning applications that couldn't be standardized. Still, data from these plants must tie into the corporate human resources and financial accounting systems. So the company uses development software in the Hyperion and PeopleSoft systems designed to translate data from disparate systems into Lear's corporate financial analysis and human resources systems — a pretty straightforward process, according to Crary.

Keep it Clean

Standardizing on an ERP package also brings its own set of problems — mainly, what to do with the old data and how to keep operations running during the transition.

Last year, Valero's five oil refineries had functioned like separate companies, each with its own ERP applications and networks. But Valero's executive leadership wanted a "one company, one look" business model. Zesch says trashing the old systems and standardizing was the only way to do this.

> Any time we interlock ERP systems, our No. 1 concern is how this will affect the customer.
>
> JOHN CRARY, CIO, LEAR CORP.

"It's much more than standardizing on one application. It's standardizing on common business practices," he explains. How else, he argues, can you meld the cultures of five companies with five different operating processes if there's no common language among them?

Zesch began the conversion by laying out for senior management exactly what it was in for — costs, time, manpower and management participation requirements.

"I asked them if this was really important to them. I asked them to rethink whether we should really do this at all," Zesch explains. "To build a common [human resources and accounting] system and process was actually a management-to-management decision."

The next hurdle Zesch faced was getting over users' fear of change, he says. His solution: Let the users do the shopping, or, in his words, "align everyone's interest for success."

Virtually every business unit from each company was represented in a nontechnical project team that sat in on six ERP vendor presentations. Then they voted for the ERP application they wanted. "They're the ones who have to live with it," Zesch says.

Valero's SAP system went live at the end of last year. Now, 90% of Valero employees access the new system. "If you want to buy or sell or move or fix something, you do it through SAP," Zesch notes.

While you're building your teams, also build your infrastructure, Murphy suggests. This may mean battling with your telephone company for more lines; updating hubs, routers and switches; or making other tweaks to network hardware and software.

In merging with the Ryder division, Allied was buying a company one and a half times its size, leaving Murphy with a pretty daunting task. He found it simpler to tackle the project in baby steps, converting the most important systems first. "We had a lot to assimilate because both companies were doing business in very different ways," Murphy explains. "Since our legacy system made it difficult to add new companies, we started with a PeopleSoft general ledger and asset management so new assets could integrate as they moved in."

Of Aging and Retirement

As with all system replacements, one of the main hurdles is what to do with the old data.

Data conversion is time-consuming and expensive. So Lear and Valero based their conversion decisions on cost justifications.

High-use data (such as recent human resources history and accounting balances) were converted and loaded into the new ERP systems. Data too old to clean up and convert was dumped into tables from Oracle Corp. or copied onto tapes and stored — a problem for users who need access to this data for years down the road, Zesch acknowledges. But the productivity hit to users is less than the conversion cost. "You take somebody like our tax department, and they may have to access this Oracle history [for] a long time," he says.

With any large-scale change to a company's ERP system comes the transition point, where the old ERP system must roll over to the new. This, Crary says, is the most critical stage.

"Any time we try to interlock ERP systems, our No. 1 concern is how this will affect the customer," he says. "In this industry — where every single product shipment is done computer-to-computer and delivered just in time — it's of the utmost importance not to disrupt this data flow."

Crary isn't kidding when he says just in time. Seating assemblies are delivered within an hour of the time the cars in which they'll be installed will roll down the assembly line, a process called "in-line sequencing." If an assembly is an hour late, the car must be moved off the line and into a lot, where it awaits custom installation, causing a delivery delay to the customer. And the supplier could end up eating the added costs.

To avoid disruption during rollovers, Lear installed backup connections to the customer. Even manual systems are in place in case the backups don't work.

In addition, both Lear and Valero ran the old and new systems in tandem for a year before pulling the plug on the old. This not only gave the IT staff time to work out any bugs, but it also allowed plenty of time for users to get comfortable with the new system.

Aligning user and management expectations is key, say veterans of ERP mergers. They also agree that the challenges of a merger and ERP tend to be more organizational than technical.

"These systems have been around for a while. They work," says Zesch.

That doesn't mean people can't goof up an ERP installation, he continues. "It's been shown you can certainly do that. But the main issues revolve around business, culture, communications and cooperation," he says. ◗

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Check With the Vendor

What if a company you have just acquired already has a licensed ERP system? Contact the ERP vendor right away, says Lear CIO John Crary.

According to Crary, you'll get one of the following three reactions from the vendor:

1. If the vendor is smart and the merger doesn't change the support model, your organization will be welcomed into the vendor's open arms. *No problem. Happy to have you as a customer. Let's transfer your account information immediately.*

2. A more likely scenario: The vendor is happy to have you. *But because there are some changes to the support model, could you please sign a newly modified license and support contract?*

3. The worst-case scenario: The vendor expects the licensor to pay an entirely new fee as if it were a new sale. While this hasn't happened much, Crary says he has run into a vendor representative who has tried to exercise this option. When that happens, he goes up the vendor's management chain and explains why it's not in the vendor's best interest to alienate an account of Lear's size. "There's usually a new understanding," says Crary. *– Deborah Radcliff*

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Surviving A Merger

Should you be bold as you try to find your way through this uncertain landscape? Will they still need you on the other side? Probably, if you heed the warnings

By Christine Willard

THOSE WHISPERY NOISES in the next cubicle raise your hackles. But when a merger is announced, icy fear freezes your brain. What's going to happen to me?

It's an emotional moment. One information technology professional described it as "Kennedyesque. I remember exactly where I was, who was around me when I heard."

But with some planning and grace under pressure, you can make it through the merger and live to tell about it. IT departments are crucial to staying open for business, so your job will likely be safe.

But if the merger means systems will be duplicated and the goal is to combine functions under one roof, your slot may be destined for the red pencil. On the other hand, change can offer opportunities that could lead you to a better job and a wad of cash.

Mergers and acquisitions appeal to decision-makers because it's quicker to take on an existing business than grow your own in that market, says Denis Picard, a partner specializing in mergers and acquisitions at PricewaterhouseCoopers (*www.pwcglobal.com*). "There may be intellectual capital or patents that are difficult to replicate," he points out. However, of every four mergers, three are ultimately considered disappointments or outright failures.

Every merger is different. For your best shot at survival, you need to know where your company stands in relation to what's going on in its industry.

Theoretically, a merger involves equals coming together, while an acquisition is more naked in its takeover implications. In reality, one company usually dominates, no matter what you call it, says Oleh Procinsky, senior vice president of the IT services divisioo for application integration and reuse at First Union Bank in Charlotte, N.C. (*www.firstunion.com*).

BP AMOCO'S Geof Wood says a major change like being merged or acquired can feel like grieving the loss of a loved one

First Union merged with CoreStates Financial Corp. last year, in the first of a rash of megamergers in banking. "In our case, CoreStates had more international systems and a heavy focus on commercial banking. The people who know those systems are more likely to survive," says Procinsky.

In most mergers these days, "IT leads the way," asserts Cheryl T. Smith, senior vice president and CIO at KeySpan Energy (*www.keyspanenergy.com*), the result of a merger last year between Brooklyn Union Gas Co. and Long Island Lighting Co. "IT offers synergies that make the merger valuable," she says.

The rule of thumb for a merger is to end up with 70% of the combined staffs, says Doug LaBoda, vice president of information systems and CIO of the Claims Services Organization at Travelers Property Casualty Corp. in Hartford, Conn. (*www.travelers.com*).

KEYSPAN ENERGY'S Cheryl T. Smith: Clear communication and decisiveness help the CIO lead IT organizations through difficult changes like mergers

When Travelers merged with Aetna Property and Casualty in 1996, each company had approximately 2,000 IT employees. Three years later, the combined company has just slightly more than 2,000 IT employees, LaBoda says. Some IT staff remained with parent Aetna, now Aetna U.S. Healthcare.

"The staff was reduced by carefully planned attrition," LaBoda says. "A number used this as an opportunity to move elsewhere. At that time, a lot went to consulting for Y2K. It was a gradual decline over 18 to 24 months."

Sweetening the situation with early retirement and severance packages can be part of the attrition, but it can also backfire. "If the program is not well designed and communicated, the best talent will walk out the door," cautions Picard. IT professionals could be offered a retention bonus to keep them on board. "It will set the merger back if the knowledge is gone," he says.

KeySpan offered early retirement with full benefits to employees, based on a formula that included years of service. The IT staff size remained approximately the same, but about 700 employees in other areas took the benefits package and retired. Nevertheless, one data center had to be closed. "It was very emotional," Smith remembers. "The staff reaction was like something dying."

Bracing for the Storm

Being decisive and communicating clearly help the CIO lead IT organizations through such difficult changes, Smith advises. Flexibility and a sense of humor can defuse tensions. And at KeySpan, few IT people lost their jobs.

First, there is the conversion to the new system, which can take from 18 months to two years. People's skills and knowledge are needed to get everything on a single system, Smith says, then get everyone trained. "You need every body you've got."

"Management is making decisions about how to bring the businesses together," Picard says. No matter how you feel about the merger, it's what's happening now. If you resist the changes, you may be perceived as a roadblock and will be the first to go. Be agile, create solutions that demonstrate your value to the business. Having a reputation for getting results will be a key ingredient in whether you stay on.

"Resist the temptation to panic," advises Geof Wood, attorney and contract manager for group procurement in the U.S. at BP Amoco in Chicago (*www.bpamoco.com*). Wood specializes in IT contracts after spending nine of his 10 years at the company in IT. He's lived through mergers, acquisitions and divestitures.

Wood agrees that a major change like being merged or acquired can feel like grieving the loss of a loved one. "I still feel it," he says. "The loss of friends, the dismantling of a great IT organization." He found it helped to blow off steam by playing sports or talking to friends. Employees created a chat room to contact one another and share feelings, and to stay in touch after they got other jobs.

"The merger is creating a new culture," says Smith. "You have to be willing to buy in. Everybody's in a new company."

Save Yourself!

No skill or position can be guaranteed to survive a merger. But some personal strategies can improve your chances. Consider these words to the wise.

See the merger as an opportunity, advises David Pack (dawd_pack@haygroup.com), practice leader for the IT effectiveness group at Hay Management Consultants (*www.haygroup.com*).

- Be aggressive about learning how the new company works.
- Be visible, volunteer, go to meetings.
- Show what you can do. Solve problems that will advance the business.
- Be reliable and positive.
- Be open to learning new skills. If your company is being bought out, you will have to change. Don't assume that the skills that got you in will keep you in.
- Overcome your fear. Do whatever it takes to marshal your emotional resources. "People who are afraid become less visible, less available. You can watch it in their behavior," he says.
- Make an effort to produce results. Don't sit back.

BP Amoco's Geof Wood counsels:

- Be patient. Wait and see how it's going to work out. Benefits may emerge over time, and you won't lose anything by waiting it out.
- Get some exercise.
- Talk it out with friends in the coffee room or at a bar.
- Take some time to look around and think about career change. "You have important applications skills," he reminds. Do some exit planning.

Be resilient, advises PricewaterhouseCoopers' Denis Picard.

- Don't let bad days become permanent.
- Help users get results quickly.
- Be agile. Find solutions, even if they aren't perfect.
- Worst case: Remember it's a seller's market for IT skills. Your parachute will open.

– Christine Willard

Willard is an freelance writer on California's central coast. Contact her at c_willard10@hotmail.com.

TAKIN' CARE OF BUSINESS

Business skills — knowledge of your company, its mission, the industry and your competitors — have become career survival skills. Here's why By Mark Baard

CAREER-MINDED IT professionals beware: A lack of business knowledge can strand you in middle management, doomed to never be entrusted with work that involves making strategic decisions.

To avoid getting stuck, information technology managers and professional development experts say, you *must* increase your corporate awareness and add business skills to your portfolio.

"We think that members of the technical community need to become less insulated and more integrated and aligned with an organization's business strategies," says Catherine Sullivan, technology training manager at The Chase Manhattan Bank in New York.

IT professionals can attune themselves to their companies' broader missions by observing workers in other areas. Techies at Jeld-Wen Inc., a manufacturer of doors and windows based in Klamath Falls, Ore., are required to take at least one trip to the company's sales offices to gain firsthand knowledge of its business practices. Developers get to see business professionals using their software as a part of routine processes and procedures.

"Our people are learning that the focus of our business is the business, not the technology," says Bren Raffaelly, software development manager at Jeld-Wen. "It's important that we feel we are really contributing to the success of the organization. We don't want to have a black-box development team."

Many companies have begun to identify core business competencies for IT professionals and to make learning them mandatory. "Our IT professionals are expected to learn communication skills and project and performance management," says Lisa Goodman, vice president and director of capability development at Zurich U.S., a division of Swiss firm Zurich Financial Services.

The company promotes on-the-job training by matching its IT employees with appropriate learning tools through "Zurich University," a learning management system it created with software from KnowledgeSoft Inc. in Mechanicsburg, Pa.

Students use the Zurich University program to sign up for online courses, workshops and seminars and to order books and videos from places like Amazon.com Inc. Redwood City, Calif.-based SmartForce and Naperville, Ill.-based NETg provide Zurich University with much of its professional development courses and simulations.

Some companies take the university learning model even further. Last year, Highmark Blue Cross/Blue Shield of Western Pennsylvania established an internal Information Systems Group University (ISGU) — complete with required courses, electives and degree certificates — for all of its 1,200 IT personnel.

"The ISG University has helped change our training focus from the single needs of departments to a full curriculum and program concentrating on helping to meet organizational goals, closing skill gaps and promoting continuous learning," says Kathleen Rucinsky, manager of resource and organizational development at Highmark.

ISGU's School of Business indoctrinates its students into Highmark's mission, vision, products and services and teaches them the basics of indemnity and managed care. The company's business professionals provide financial and marketing instruction with the aid of Web-based courses from Nashua, N.H.-based SkillSoft Corp. and financial simulations created by Pittsburgh-based Edgeworth International Inc.

Learning on the Fly

Still, many IT professionals have to acquire new business skills on their own.

"We learn most of our business skills on the fly," says LuAnn Holmes, a computer support specialist for Henderson, Nev., reportedly the fastest-growing city in the U.S. Holmes is pursuing a master's degree in organizational management through a distance-learning program at the University of Phoenix. Meanwhile, she says she gets by "mostly by picking the brains of some of my friends in the finance department."

Holmes has already seen a payoff for reaching out to her co-workers. "A year ago, a manager might have asked me to make one or two recommendations for capital expenditures," she says. "But now I am responsible for the entire computer budget."

One way to create a channel to other departments is by becoming more open to sharing your expertise.

"IT people are in a good position to become teachers at their organizations," says Ron Rassner, global best-practice leader in technology and innovation at New York-based American Management Association International, which designs and delivers management development programs and products. "They are often well ahead of others in using the latest collaborative tools and often better at managing change and defining the tasks in a project."

"There's no question," Rassner says, "that if IT professionals can translate their knowledge for other people at the office, they can move their careers forward. After all, a lot of back-office professionals now need to learn these skills, too."

Baard is a freelance writer in Milton, Mass.

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FINANCIAL & BUSINESS CONCEPTS IN BRIEF

Generally Accepted Accounting Principles

BY STEVE ALEXANDER

IN THE PAST five years, the accounting profession has raced to catch up with changes in information technology. As a result, there has been a sharp increase in the number of accounting rules, or Generally Accepted Accounting Principles (GAAP), that apply to IT managers and the people who work for them.

In most cases, the GAAP rules that affect IT require that managers pay closer attention to what IT projects are supposed to accomplish because the nature of the work affects how its cost will be treated for accounting purposes. And IT managers must pay closer attention to how IT workers divide their time among projects because labor hours for some projects may have to be accounted for differently than labor hours for others.

Paul Munter, chairman of the accounting department at the University of Miami school of business administration in Florida, helped write recent GAAP guidelines, known as Statement of Position (SOP) 98-1, on how to account for development costs of software being designed for internal use [Business, Oct. 18].

The fundamental issue for IT managers "is trying to identify what things your people are working on. Because some of their time can be capitalized and some of it cannot," says Munter. Capitalized costs are written off against profits over several years. Expensed costs are written off immediately against current profits.

"Suppose an IT person is working on implementing a new software product or working on testing a new software product. That person's salary for time spent that way is a capitalized cost," Munter says. "But if that IT person is training others on how to use software, the salary for that time would be expensed."

While such accounting rules might appear puzzling at first, Munter says they're logical. Because companies can't function without software, the time spent implementing or testing new software is considered part of the creation of an asset that will benefit the company for several years. As a result, those labor costs are capitalized over several years.

But training costs are expensed because they're considered a cost of doing business rather than a cost of creating an asset. Under the same theory, software maintenance costs are also a part of doing business and therefore should be expensed.

"IT people are not used to tracking things in this way. It's not a superhuman task, but unquestionably it's a change in practice for the IT profession," Munter says. But there are benefits to IT as well. "Once you start keeping track of your IT people, you start knowing how they spend their time."

Feasibility Rule

Companies that design software that will be sold face more relaxed accounting rules because of something called the "technology feasibility rule," Munter says.

Although companies that develop software for their own use must immediately begin capitalizing payroll costs associated with developing it, that isn't true for software firms developing products for sale. Software firms don't have to capitalize their payroll costs until a product is proved to be technically feasible, Munter says. Typically, the majority of software development costs occur before technical feasibility is proved, so software companies can be much less concerned about keeping track of the payroll costs associated with software development.

Leasing Vs. Owning

Another GAAP rule that affects IT managers is FASB 13 lease capitalization from the Financial Accounting Standards Board (FASB.) It defines ways of handling computer equipment leases, says Greg Uchimura, manager of cost accounting at GTE Data Services in Temple Terrace, Fla.

Here's the rule: If equipment is leased for a year at a time, it's not considered to be an asset. As a result, its cost must be treated as an expense taken out of current profits. But if the lease contract contains what might be considered "bargain" terms for converting the lease to a purchase, GAAP rules assume that the leased computer equipment is an asset that must be capitalized, or written off against profits, over a period of several years.

"Under the FASB ruling, [the latter case] is considered to be 'constructive ownership' because the lease is so preferential [toward a purchase] that the assumption is you will exercise it. The idea is that you'd be a fool not to buy, therefore you own it," says Uchimura.

Sometimes, GAAP rules combine to create more work for IT managers.

One rule, developed in 1997, deals with business process re-engineering costs that are incurred at the same time as a major systems implementation, says Dave Kaplan, co-director of national accounting consulting services at PricewaterhouseCoopers in Florham Park, N.J. The rule says all business process re-engineering costs have to be expensed, or charged against current profits, at the time they're incurred.

The idea behind the rule is that, as part of implementing enterprise resource planning systems, a firm will change its business methods (or re-engineer processes) to maximize the new computer system's efficiency. For example, if a new human resources system is being installed, some work that was done by hand may become automated.

Which Rule?

But that rule has some interesting effects when considered with SOP 98-1. The problem is this: IT managers now must distinguish between the costs of implementing a new computer system that are related to business process re-engineering, and therefore would be expensed, and software development costs that would be capitalized under SOP 98-1, says Kaplan, who was on the committee that wrote SOP 98-1.

"These costs often occur in the same project, so the question is, which costs does one expense or capitalize?" Kaplan says. "And some people think accounting is easy."

Alexander is a freelance writer in Edina, Minn.

DEFINITION

Generally Accepted Accounting Principles are conventions, rules and procedures that define accepted accounting practice, including broad guidelines and detailed procedures that affect accounting for IT projects.

AT A GLANCE

Key Rules For IT

Two important GAAP rules that apply to IT organizations:

1. **SOP 98-1:** Defines how to account for development costs of software being designed for internal use.
2. **FASB 13 lease capitalization:** Defines ways of accounting for computer equipment leases.

GAAP: The Basis for Financial Reports

The original GAAP doctrine was set forth by the Accounting Principles Board of the American Institute of Certified Public Accountants, which was superseded in 1973 by the FASB, an independent, self-regulating organization.

GAAP is the basis for preparing and reporting information that is included in the financial statements a company distributes to its shareholders. But when it comes to calculating income for tax purposes, a company may be called upon to use different methods based on tax law and Internal Revenue Service rulings. IRS rules frequently differ from GAAP.

■ *Are there business terms you would like to learn about in QuickStudy? Please send your ideas to quickstudy@computerworld.com.*

Dear Career Adviser:

I work for a large health care insurance company that was recently acquired. The acquiring firm has announced that it will eliminate our systems after a one-and-a-half-year transition period and will move to an almost 100% e-commerce platform over the next five years.

I've started a job search but haven't been able to get interviews. I was trained in programming by a large technical school run by my employer and now have three years of experience. My skill set — batch Cobol, JCL and Statistical Analysis System — isn't in demand, with folks coming off year 2000 projects. I also have my bachelor of science degree in business management and just started a master's program in management information systems. Will this degree help me get new, exciting work that will lead to a bright future? — CAREER ER REQUIRED

Dear ER:

Acquiring a degree may take longer than acquiring some specific hard-core technical skills that employers covet right now, plus you'll need to get over the long shadow those legacy systems cast over the newer skills and prove you understand how to apply them to an e-commerce world.

According to Melanie Grondel, president of Silicon Valley's Human Resource Consulting Association, while a management degree is an asset, what employers really want is basic: to get data out of those legacy systems via newer, Web-based applications based on Common Object Request Broker Architecture and Java.

These languages allow programming and application development across old and new technology platforms, including access to legacy systems, as needed. And you'll rule the roost, Grondel says, if you offer these, plus Java Database Connectivity and knowledge of a database like Oracle, along with an exposure to application development for enterprise resource planning systems with finance and manufacturing modules, which will show your understanding of business.

Dear Career Adviser:

I have been a vocational rehabilitation counselor for five years and want to become an information technology recruiter in the Bay area. I have a master's degree in counseling and development and have been using computers regularly since 1987. What do I need to do to become an IT recruiter? Can I immediately be successful with my current skills? — ALL THOSE BUCKS

Peggy Gorrell is an expert in high-tech careers and recruitment. Send questions to her at www.computerworld.com/career_advisor.

Dear Bucks:

Programmers and career counselors alike want to cash in on the technical recruiting boom. But beware: Technical recruiting is neither kidnapping high-priced heads from one company to another nor career counseling. Good recruiters understand how an industry develops and grows, and they provide more than just C++ programming talent.

If you're serious about recruiting, consider taking courses from a leading technical-recruiting training firm. You'll learn how to assess job opportunities and whether companies have something solid to candidates' careers and goals, and vice versa. Do you know how to interview a candidate *and* a client? How to manage expectations and relationships on both sides? You'll also need above-average listening, people assessment and sales skills. The hours are long, the details great and the stress high. However, the biggest caveat is this: You may be placing people for money, but never forget that the very best recruiters do excellent long-term work for both the client company *and* the job candidates.

Dear Career Adviser:

I have a background in messaging infrastructure design, development and deployment (as a Certified Lotus Professional for Notes R4 and R5 and a Microsoft Certified Engineer), specializing in Notes and Exchange. I work for a systems integrator and would like some advice on the technologies to focus on for the future. What technical skills should I acquire next?

— MESSAGING MICHAEL

Dear Messaging:

According to Bernie Aua, vice president and senior programmer at Digital Paths LLC in Stanton, Calif., wireless devices have become an essential part of information communication and business operations, as companies look for ways to utilize personal digital assistants and Internet phones and make business information available via these devices.

Knowing Wireless Markup Language (WML), the successor to Handheld Device Markup Language (HDML), will make you valuable, since it is used to create content and a user interface for narrowband devices, allowing information converted from Notes or a database to WML format to be used by an Internet phone.

In short, if it's wireless you're after, become familiar with server technology, Common Gateway Interface applications, WML and HDML. These are the key skills that will make you extremely valuable.

BRIEFS

Customer Loyalty

Total Research Corp. in Princeton, N.J., has introduced Total e-Loyal, a product designed to measure customer satisfaction in a retail e-commerce environment. Total e-Loyal returns to companies using the product a Web site report card based on the customer's purchasing history and shopping experience with the companies' sites.

More Toys

Noodle Kidoodle Inc. in Syosset, N.Y., a retailer of educational children's products, announced the official launch of its enhanced Web site, featuring full e-commerce capabilities. The site is operated by an Internet joint venture that is 80% owned by Noodle Kidoodle and 20% owned by Daniel Nissan, the former president and CEO of NetBrucer Inc. in North Brunswick, N.J.

Kraft E-Commerce

Kraft Foods Inc. in Northfield, Ill. will expand its use of Edmond, Okla.-based The vialink Co.'s viaLink Item Catalog service, to all of its retail products. Item Catalog provides information on products and prices to Kraft's partners. In addition, Kraft will combine Item Catalog with viaLink's Item Movement service, which captures retail point-of-sale and warehouse information.

Web Organizer

JumpPage, a Web-organizing service from Ezlogin.com in Santa Clara, Calif., now offers access to personal information from a choice of 1,500 financial, shipping, general information, e-mail, chat and other Web sites. Users can consolidate key information from various sites on a personal summary page.

Staffing Up

Management consulting firm A. T. Kearney Inc. in Chicago, a subsidiary of Plano, Texas-based Electronic Data Systems Corp., acquired Telesis, a French consultancy that will now go by the A. T. Kearney name. More than 200 consultants will work in the Paris office, and all 30 Telesis staffers will join A. T. Kearney's French operations.

Y2K-Ready

Neil D. Levin, New York superintendent of insurance, announced that all insurers licensed in New York state are in compliance with the New York State Insurance Department's Y2K disclosure requirements. The department announced June 30 that 44 insurers had failed to comply, but all have now done so.

Talent Exchange

Sunnyvale, Calif.-based Icarian Inc. has launched the Icarian Workforce exchange (*www.icarian.com*), an electronic marketplace that automates transactions among firms that are hiring new employees and the headhunters and employment agencies that provide them. The system was designed to streamline the costs and time required to complete these transactions while providing talent suppliers an expanded database of hiring companies.

Entrepreneur Honoree

Pierre Omidyar, the founder and chairman of eBay Inc., was honored this month as New York-based Ernst & Young LLP's national Entrepreneur of the Year among Internet products and service companies.

Health Performance

Blue Cross/Blue Shield of Western New York and Blue Shield of Northeastern New York have selected San Francisco-based McKesson HBOC Inc.'s Clinical Resource Management System to help them analyze the individual performance of physicians and health care providers.

Global Finance

Best Global Telecommunications Company

Wired Index

One of the top 40 companies to lead the new economy.

Get th connection?

One of the top 100 IT companies for 1999.

BusinessWeek

Number 2 ISP in the U.S.

Data Communications June 1999

CABLE & WIRELESS

We're proud to say that there's only one connection between these four quotes. And that's Cable & Wireless. We take our role as a global leader in Internet and data communications seriously. From ATM to IP VPN to Web hosting, Cable & Wireless delivers services that improve your business on line, off line and in terms of your bottom line. So if you want to succeed in the world of e-business, talk to Cable & Wireless. We've got the connections to deliver net results. Cable & Wireless. Get the connection.

Visit www.GetTheConnection.com

TECHNOLOGY

JAVA TOOLS FOR THE SERVER SIDE

The action on Java is moving away from the client and toward the server. Two new tools — one from Sun Microsystems and another from Symantec — aim to make that transition easier.

Sun's Java Message Queue routes messages among distributed Java applications, while Symantec's VisualCafe 4.0 gives developers the option of working with third-party tools such as Oracle's 8i database and Iona Technologies' middleware tools. ▸ 56

A FUNCTIONAL, STYLISH TABLET

If you're willing to pay the price (at least $3,500) and carry the weight (upwards of 5 pounds), the Qbe from Aqcess Technologies Inc. is a stylish, functional unit that delivers everything from pen input to a built-in camera. What's more, says reviews editor Russell Kay, it's got a sleek, inviting design. ▸ 56

EMERGING COMPANIES

Shaman Corp. has a brilliant idea: diagnose users' PCs online, then provide a repository for all those pesky drivers, patches, upgrades and fixes that never seem to be available when you really need them. We take a closer look at the San Francisco-based company's intriguing promises and offer a hands-on peek at its products. ▸ 57

INDUSTRY WATCH: UTILITIES

Utility companies haven't traditionally been thought of as hotbeds of cutting-edge technology. But with federal and state deregulation beginning in earnest, many utilities are turning to their IT departments to lead the way, creating lots of new career opportunities. Among the areas with the hottest opportunities: Systems integration, radio and satellite systems and database management. Middleware and business process development skills are also in demand. ▸ 68

QUICKSTUDY: FLAT PANELS

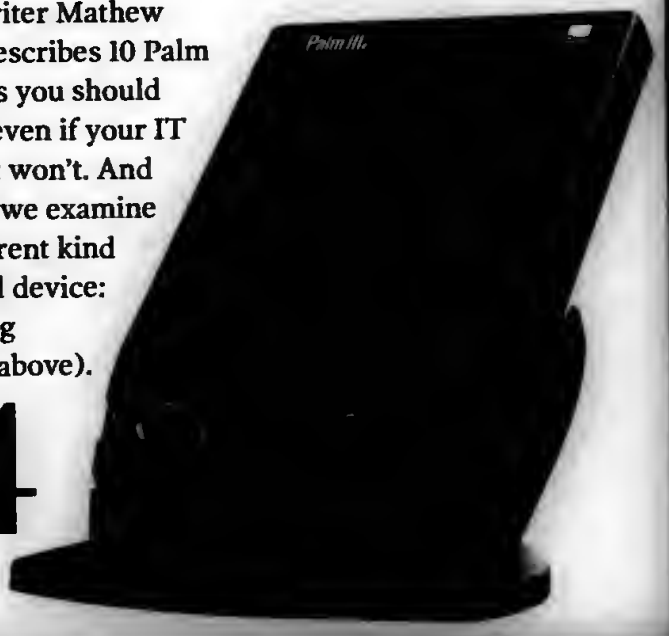
They're thin and flashy, but flat-panel displays are still too expensive to infiltrate mainstream America. We look at the advantages such as high resolution, reduced desk space and lower power use than heavy, clunky old CRTs. We also preview some promising developments that should cut the cost of such displays. ▸ 63

FLASH BACK TO 1996

In 1996, a Supreme Court ruling helped shape the Web as we now know it. That year, the Supreme Court overturned the Communications Decency Act, which would have subjected all forms of Internet content to legal scrutiny and, ultimately, could have stifled the Web's growth. ▸ 66

APPLICATIONS AT YOUR FINGERTIPS

LOYAL PALMPILOT USERS know it's generally up to them to find, install and support Palm applications. Features writer Mathew Schwartz describes 10 Palm applications you should check out, even if your IT department won't. And on page 58, we examine a very different kind of handheld device: the scanning translator (above).



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New Java Tools Aid Move to Server Side

Java tools from Sun and Symantec aim to speed development, integration

BY LEE COPELAND

NEW JAVA TOOLS from Sun Microsystems Inc. and Symantec Corp. aim to better integrate enterprise applications and the development environments used to create those applications.

The tools' new integration capabilities demonstrate a shift from client-side Java tools to the need for server-side Java code that links to various applications across a business.

"Java started as an applet language whose only purpose was to finish Web pages," said analyst Deborah Hess at Gartner Group Inc. in Stamford, Conn. "Java is a language that is growing up while we watch. It's now available for serious development on the server side."

Earlier this month, Sun unveiled Java Message Queue 1.0 and released Java Blend 2.0. Java Message Queue routes messages among distributed Java applications, while Java Blend helps programmers connect their Java applications to databases without writing query scripts. Java Message Queue supports the Java Message Service 1.0.1 specification.

Automatic Links

Hess lauded Java Blend's automatic connectors. "Java developers aren't experts in SQL, so this will make it easier to connect to databases," she said.

But Hess said more connectors are needed to tie legacy code to this new breed of distributed Java applications.

"The real interest in Java is on the server side, so developers need [application programming interfaces] and hooks to allow them to use legacy code, so they don't have to redevelop business logic in the middle tier when integrating older applications into the new ones," she said.

Cupertino, Calif.-based Symantec, meanwhile, released its VisualCafe 4.0 Java development environment. VisualCafe was designed to give developers the option of working with various third-party tools such as Oracle Corp.'s 8i database and Iona Technologies PLC's Orbix middleware tools.

It also supports Enterprise JavaBean (EJB) integration with IBM's WebSphere, BEA Systems Inc.'s WebLogic and Oracle's application server. An EJB provides a wrapper or interface between different servers and Java applications.

EJB Support

Enterprise application development manager Angelo Serra at the Ohio Department of Transportation in Columbus, Ohio, said EJB support is an essential component for rolling out distributed Java-based applications. Serra's development team was forced to custom-write an EJB for its applications, a project that took eight months.

The EJB provided a persistence layer, or intermediary, "between our business logic and the data, but it took time away from writing applications that meet our business needs," he said.

Perking Up Java

New Java product releases include:

SUN MICROSYSTEMS INC

- **Java Message Queue 1.0:** Routes messages to distributed applications and supports Java Message Service 1.0.1 standard. Available by year's end at $495.
- **Java Blend 2.0:** Automatic connectors to databases, which promises to eliminate the need to write query scripts. Available now at $1,195 per seat; upgrades from Java Blend 1.0 are free.

SYMANTEC CORP

- **VisualCafe 4.0:** Java development environment with support for third-party tools from Bea Systems Inc., Iona Technologies PLC, Oracle Corp., PointBase Inc. and Sun. Enterprise Java Bean integration with IBM's WebSphere, Bea's WebLogic and Oracle's application server. Available now, with prices ranging from $99.95 for standard to $2,799.95 for the enterprise edition.

Qbe Tablet Is Stylish and Function-Rich

It's a pen computer, a camera and more

BY RUSSELL KAY

Although everyone else seems to regard Comdex as cruel and unusual punishment, it is still the only place where you get to see just about everything related to computers and information technology.

One of the highlights was the Qbe (pronounced "cube") from Aqcess Technologies Inc. in Santa Ana, Calif. It's what's termed a tablet computer, and it's the best realization to date of what we once called pen computing. You hold it in your arm, as if it were a clipboard, and use a stylus to enter information directly on the screen.

The Qbe is a full Windows 98 or Windows NT computer with 64M or 128M bytes of RAM (expandable to 512M bytes), a 4G- or 8G-byte hard drive, built-in CD or DVD drives, and a 13.3-in. active-matrix color display good for a resolution of 1,024 by 768 pixels. The CPU is a 400-MHz Celeron or a 450-MHz Mobile Pentium III.

The Qbe was designed to accept a variety of inputs: It has a full touch screen, with a stylus for pointing and dragging, and it performs handwriting recognition (using the Calligrapher engine) or will display an onscreen keyboard layout that is activated by the stylus.

It comes with speech-recognition software (Lernout & Hauspie Speech Products NV's Voice Xpress) and a headset. And an auxiliary keyboard and port replicator (called a Porticle) comes with it.

Did I mention the built-in digital camera? This little guy hides away at the top center of the display and can be rotated to point toward or away from the user. As with most built-in cameras, it's handy but of limited quality.

MORE THAN JUST A SOUPED-UP LAPTOP, the Qbe tablet offers a variety of input methods, a built-in digital camera and a great design

The Qbe has more ports than almost any other portable computer this side of 8 pounds. There's a device bay for the removable CD or DVD drives or an extra battery; all the usual serial, parallel and video ports; and Universal Serial Bus and 1394 (a.k.a. Firewire). Finally, it has a built-in modem and Ethernet connection.

Visually, the Qbe is a real looker. Its industrial design is sleek, attractive, inviting and curved where it comes in contact with your arm and hand. The optional "case" (more akin to a cell phone's formfitting coverall) has a strap to help keep it positioned on the hand holding the unit and a padded flap to protect the screen when it's not in use.

The Qbe can be used on a desk. An auxiliary arm with the network connection attaches to the back, supporting the Qbe like an easel. The screen can't be brought to a full vertical, however.

At 1.5 in. thick and a pretty hefty 5 lb. — remember, this isn't a laptop but is intended to be held in one's arm — the Qbe won't be for everyone. And at $3,495 or $4,495, depending on configuration, it's expensive. But it's also unique. While there are other tablet computers on the market, including Fujitsu Ltd.'s, among others, none is as good or as visually stunning as this newcomer.

Swap Versions, Not Horror Stories

Start-up Shaman builds software-version control app to help manage desktops

BY AMY HELEN JOHNSON

GIAN ZOPPO, informatioo ayate ma director at creative design firm The Designory Inc. in Long Beach, Calif., knows the definitioo of *futility*: "That sinking feeling you get when you realize you speot the last 10 hours troubleshooting" the wrong problem.

And spending 10 hours following false trails is not something Zoppo can afford to do. "In the current environment of IT, the thing you have the least of is time," he explains.

To avoid futility, Zoppo relies on Shaman Enterprise, a desktop software-version management package from Shaman Corp. in San Francisco, to keep his 150 end users' computers up-to-date with the latest versions of business software and the accompanying upgrades, bug fixes, patches and security plugs. It's a tool based on the idea that running hot-off-the-maintenance-CD software preveots problems that can add up to costly downtime.

Downtime Concerns

Chris Spain founded Shaman because he had the same worries about downtime as informatioo technology managers such as Zoppo. Now Shaman's chief technology officer, Spain three years ago was a documentary filmmaker whose production work ran on computers with several different operating systems.

"Ten to 20% of the time, we ran into a bug that shut us down for the day," says Spain. "Most times the bug had been solved, but we didn't have the fix."

What was lacking, Spain says, was a place where all the fixes were available for review and an intelligent way to filter the list to pick out the patches for the exact version of the software his users ran. The central repository idea is what Zoppo likes about Shaman Enterprise: The product, rather than he, now spends the time hunting vendor Web sites to find the latest patches and dot releases, gathering them together in the Shaman Knowledge Base.

That gives him just one source for the updates he needs; deploying them is a simple matter of tapping the Shaman Knowledge Base, creating a distribution file and installing it on his users' desktops.

Another key advantage of the Shamao Knowledge Base is that it covers older versions of software packages, says Shaman CEO John Jack.

Vendors' customer support sites focus on the absolutely latest stuff, he points out, urging users to upgrade if they have a problem with a previous version, even though many companies still run older versions of desktop applications and have no plans to change.

The Shaman Knowledge Base is the company's biggest asset, says Adam Couture, an analyst at Gartner Group Inc.'s Dataquest in Lowell, Mass. "No other company holds a knowledge base like the Shaman Knowledge Base," he says.

What'a eveo smarter, Couture says, is that Shaman has taken the time to forge alliances with enterprise asset-management vendors, like Hewlett-Packard Co. in Palo Alto, Calif., Peregrine Systems Inc. in San Diego and Remedy Corp. in Mountain View, Calif.

The Top Tools

Couture recently conducted a survey among CIOs and asked which tools and suites are the best at desktop management.

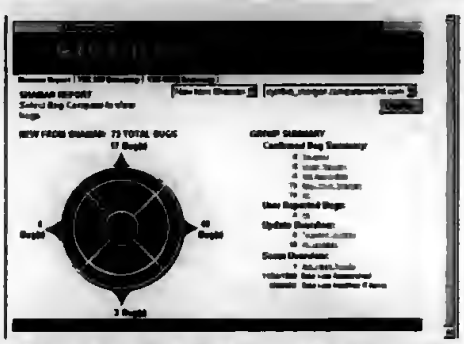
The winner was "none of the above." "It shows that the desktop-management suites are not complete solutions," says Couture. "As a stand-alone product, [Shaman Enterprise] has some relevance. Where it really shines is when it integrates with other help desk tools."

Shaman'a business strategy has been to focus on desktop applications and medium-size to large enterprises, but it's developing an Internet-based product for small to medium-size companies. Shaman is also planning a similar knowledge-base product for electronic-business applications, specifically Unix and Unix-like server software such as Solaris, according to Jack.

Along with the extensions of its core product line, Shaman is also expanding into new areas of reliability and management, such as Y2K compliance and Windows 2000-compliance testing.

This rapid growth spurt, says Jack, is part of Shaman'a plan to become an IT infrastructure company, along the lines of Foster City, Calif.-based Inktomi Corp. The eventual goal is to float an initial public offering. "We all want to be billionaires," he jokes.

Johnson is a freelance writer in Seattle.



USERS logging in to Shaman's online test center will see a report screen. To get results, they will need to call or mail the company

Shaman Corp.

Location: 2415 Third St., Suite 231, San Francisco, Calif. 94107

Telephone: (415) 241-9952

Web: *www.shamancorp.com*

Niche: Desktop software-version management

Why it's worth watching: Competitive advantage rests with an extensive knowledge base of old versions, bugs, patches, work-arounds and security fixes.

Company officers:
- John Jack, CEO
- Christopher Spain, co-founder and chief technology officer
- Kurt Brouwer, co-founder and chairman

Milestones: Founded 1996; first product, 1999

Employees: 36; growing at a rate of 300% per year

Burn money: Private investors

Product: Shaman Enterprise

Customers: Donaldson, Lufkin & Jenrette Inc., Intuit Inc., Sterling Software Inc., U.S. Department of Education

Partners: Hewlett-Packard Co., Peregrine Systems Inc., Remedy Corp., Careport

Red flags for IT:
- Shaman doesn't supply the whole software management solution. It needs to continue to build partnerships with enterprise management vendors.
- Overreach potential. Shaman is simultaneously expanding into small and medium-size enterprise markets, Unix and Unix-like server software, Windows 2000 compliance and year 2000 compliance. On New Year's Day when we're in our bunkers eating Spam, will we care?

COMPUTERWORLD emerging companies

[the buzz STATE OF THE MARKET]

Knowledge Base Gets a Workout

Because several people pointed to Shaman's Knowledge Base as the company's key competitive advantage, I decided to check out the quality of the analysis Shaman offers. The company'a Web site offers a free profile of a computer as a demonstration of the product.

I requested a list of bugs and upgrades for a standard desktop PC stuck in the dark ages of Windows 95 and Office 97. This machine definitely has problems: memory pointers go astray, and it often slips into a coma when one particular printer driver runs.

Shaman found a total of 37 bugs and suggested 42 updates (in addition to bug fixes, it highlighted upgrades to older software). The bug report comes with a cover page and hot links to detail pages. The initial detail page contains blurbs about each bug, including its name, the specific versions of software affected, a brief description, a rating and a hot link to a solution. By clicking on the name of the bug, you get a more verbose description.

The verbose page is also where I found work-arounds for problems that don't have downloadable patches. Disappointingly, some bugs didn't have work-arounds at all, despite hot links promising them. In some cases, the hot link is to the message "No solution currently available." It would be better if Shaman added a category that said that on the initial detail page.

The ratings were valuable and chosen intelligently. Shaman didn't rate blurry Acrobat graphics as a serious problem, but it gave anything that might result in data loss, a system crash or an application meltdown a "critical" rating. It rated a few as "moderate."

It's possible to go through every bug and install every update and fix separately. But there's a second detail page that contains a checklist of available downloads for the problems Shaman found, which lets you get everything in at once instead of hopping to multiple sites. This list also lets you download the upgrades to free software-like browsers. The fixes to critical bugs appear in red.

The problem with the disconnected detail pages is that it'a not easy to pick Update A to fix Bug Z. In fact, many fixes are named differently from the bugs.

But I can't get too picky. I never paid attention to updating my software before. But with Shaman, I have a nearly painless way of figuring out what might go wrong and finding upgrades and patches. – *Amy Helen Johnson*

Speech Translators Stumble

BY HOWARD MILLMAN

ENGLISH MAY BE THE universal language of commerce, but when you travel internationally or deal with overseas associates, you will accomplish more if you can understand their language.

If you don't have the time, inclination or aptitude to learn another language, portable electronic translators look like an ideal solution. Unfortunately, these devices are too literal- and single-minded to accurately translate one language into another.

"What the market wants is something that will translate on the fly, but that's a lot closer to science fiction than fact today," says Rob Enderle, vice president of desktop and mobile devices at Giga Information Group Inc. in Santa Clara, Calif. Enderle predicts that it will take several years before that degree of usability is achieved.

I tried two portable handheld scanners, Image Recognition's IRISPen Executive and Seiko's Quicktionary. Each is about the size of a husky highlighter pen. They scan in words or phrases and then attempt to translate them into a foreign language. Both worked well as text-only scanners, but you're likely to be disappointed by the devices' elementary and error-prone speech-based translations. I attribute most of the problems to the devices' inability to recognize innuendo or inflection.

I also looked at a software-only package, Universal Translator 2000, that achieves modest success at translating entire documents, including Web pages and e-mail messages.

IRISPen Executive

Image Recognition Integrated Systems
www.irisusa.com
List price: *$299; translation software modules: $79. A Macintosh version is also available.*
Pros: *Scans text then transfers it into Windows applications; high text recognition accuracy; translates six languages*
Cons: *Must connect to a computer; limited speech quality with 50% to 60% accuracy; scans one line at a time*

I have on quibble with the IRISPen when it's used as a scanner. It's easy to set up and use. After working with it for a few minutes, I was able to use it to reproduce text and small graphics with 80% accuracy. Unfortunately, while its text-to-speech feature strives to understand context, the technology needs refinement. For example, when scanning multiple lines from a half-dozen magazines and newspapers, the IRISPen often recognized the words. A Spanish-speaking colleague, however, described the translated phrases as "tolerably inaccurate but awkwardly phrased."

Just slide the smooth-rolling IRISPen over a line of text. The pen scans one line at a time and sends the translated data to the Windows clipboard, ready for pasting directly into popular word processors, spreadsheets and databases.

The IRISPen uses a parallel port to connect in your PC or laptop. Because it draws its power from a keyboard port, IRISPen includes a small external battery pack as you can use it with a laptop. At 1.5 in. wide by 6 in. long, this gadget is ideal for laptop-toting travelers.

THE IRISPEN works well as a scanner but can be inaccurate

SEIKO'S QUICKTIONARY doesn't need a computer and comes with an instructional video

Quicktionary

Seiko Instruments USA Inc.
www.seiko-usa-cpd.com/cpd
List Price: *$269*
Pros: *Stand-alone, so needs no computer; extremely convenient; includes tutorial video; contains more than 400,000 words and idioms*
Cons: *Limited capacity and speech quality; low audio quality*

Although it's about the same size and weight as the IRISPen, the Seiko is self-contained and powered by three AAA alkaline batteries, as there's on need to connect it to a PC. That's a mixed blessing. Words that you scan are displayed on the unit's easy-to-read 0.75-by-2-in. LCD. However, because the Quicktionary relies only on its internal memory for data storage, it can read just one or two words at a time, up to 32 characters.

Despite its limited capacity, it can help someone learn a foreign language and to occasionally translate an unrecognized word in a document. Its singular benefit is simplicity. Setup takes just seconds, and six buttons control all functions. A plastic OptiCard allows you to "type" in a word that is impractical to scan, like a newspaper headline or a street sign.

The device's built-in speech module attempts to pronounce the word in English, while it displays the translated word (but doesn't pronounce it), in one of a handful of languages, including French, Portuguese, Italian, Spanish or German.

Because it deals with only one word at a time, Quicktionary offers high word-recognition accuracy – about 90%. A steady hand during the scan is paramount. For example, it initially insisted on translating the English word *first* erroneously as *tint* in Spanish. After some practice, it offered the correct translation of *primera*. Using the bundled earphones, instead of the tiny and tinny built-in speaker, helped in improve the quality of the Quicktionary's speech synthesis.

Universal Translator 2000

Language Force Inc.
www.languageforce.com
List price: *$99*
Pros: *Translates 40 languages; can bypass English; translates entire documents automatically; includes entertaining language-learning games*
Cons: *Low speech-recognition accuracy; requires a computer*

Translating a written business document can result in higher accuracy because a computer can more readily understand the context of written words. Universal Translator 2000 delivered 80% in 80% accuracy (excluding technical terms). Although its accuracy wasn't quite as high as the IRISPen's, a Spanish-speaking colleague gave the Universal Translator higher marks for context recognition.

Translating a three-page document took less than two minutes. Using the product's self-reading speech synthesis or dictation features drops accuracy to about 60%, but for either, your computer needs a sound card and microphone.

While most translation products focus on translating from or into English, Universal Translator can translate directly between non-English languages, making it well-suited for use in multinational firms.

Millman operates Data System Services, an automation and problem-solving consultancy in Croton, N.Y. He can be reached at hmillman@ibm.net.

Thinking outside the box led us to this one.

Introducing the Unisys e-@ction Enterprise Server ES7000. The first Intel®-based server to bring to e-business the power and reliability once available only on large UNIX/RISC systems and mainframes. And at a fraction of the price. It's based on our revolutionary Cellular MultiProcessing architecture. Which means the ES7000 can run Microsoft® Windows® 2000 and UNIX in the same box at the same time. And it seamlessly links to your legacy system, critical for doing transaction-heavy business on the Web. But that's not all. Employing 32 Intel Pentium® III Xeon™ processors, the ES7000's unique platform allows it to handle the unpredictable loads of e-business — providing unprecedented levels of performance, reliability and agility. The Unisys e-@ction ES7000 is the latest in a series of outside-the-box ideas from the people who never stop thinking of ways to make your business better. To find out more, go to www.unisys.com/ent

intel inside pentium® III xeon™

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Enterprise Server
ES7000

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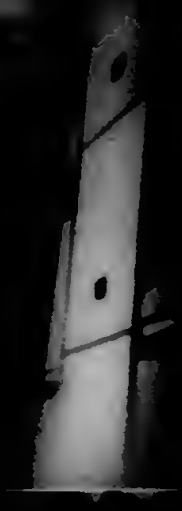

IT LEADERSHIP is about using every opportunity—every technology—to reinforce your company's purpose. It's about defining business imperatives and driving the acquisition of the right technology. But the daily demands of running a company and an IT infrastructure don't always allow the time to get up to speed on the latest innovations.

As Director of the AMS Center for Advanced Technologies, Dr. Butler's mission is to increase our understanding of emerging technologies. "Ours is a commitment to keeping AMS clients on the frontier of IT practice," she says. "To address technologies that will fundamentally change the business landscape."

YOU CALL THIS WORK?

MONTHS BEFORE MOST OF US SEE THE LATEST TECHNOLOGY, DR. BUTLER GETS A PEEK AT THE REALLY INTERESTING STUFF.

For example, her team's initial XML research yielded an intelligent agent that collects relevant information across multiple sources then synthesizes, categorizes and disseminates it based on a user's specified interests. "Our Next Generation Enterprise and Business Intelligence & Knowledge Management labs are collaborating now to evaluate emerging non-numeric mining tools," she proudly reports. "We'll be releasing the results soon."

And where does Dr. Butler gain her understanding of emerging technologies? From her peers, at conferences, from the Web and from *Computerworld*. The Newspaper for IT Leaders.

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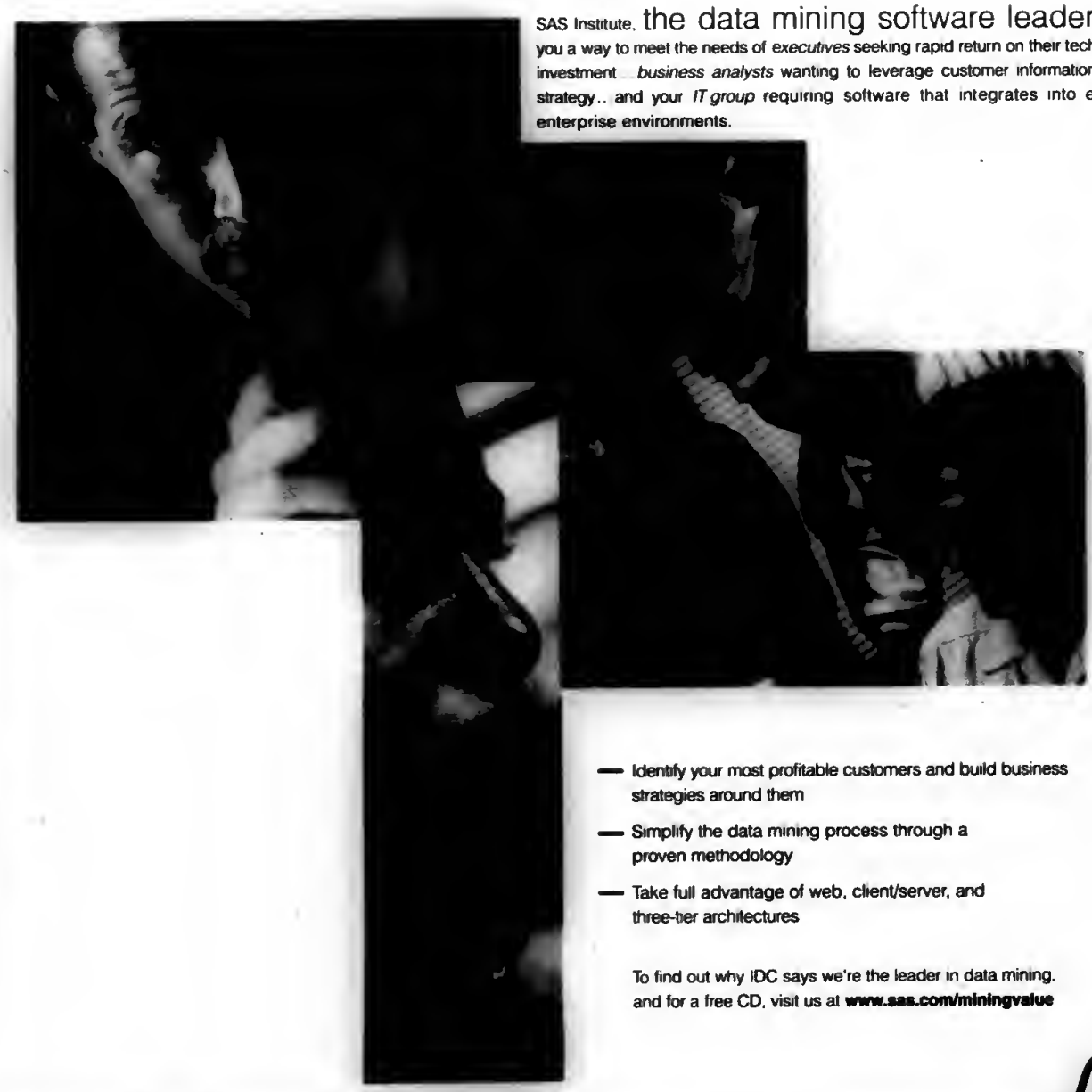

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Flat-Panel Displays

BY FRANK HAYES

THEY'RE SHARPER. They're more compact and more durable. They use less electricity and pose fewer potential hazards for users. In fact, just about everything about flat-panel displays makes them better than the TV-like CRT monitors most people still use.

Except, of course, for the price.

The premium of several hundred dollars that a user must pay for a flat monitor over the price of a CRT monitor of the same size and resolution means flat panels are still specialty items. They're mostly built into laptop computers, but are increasingly used in stand-alone displays.

DEFINITION

A flat-panel computer display uses a thin screen, usually only a fraction of an inch thick, instead of a TV-like CRT. Flat-panel technologies such as LCD screens are used in laptops, stand-alone display screens and the new breed of all-in-one computers.

Users in the U.S., ranging from Wall Street firms to the Mayo Clinic in Rochester, Minn., have begun to use stand-alone flat-panel screens to reduce the desktop space required by large monitors, which can be 18 in. or more deep (compared with 2 to 4 in. for flat-panel displays). And some users think the high-tech aesthetics of a flat screen are worth the cost.

Part of the reason for that higher price tag is that flat-panel technology is relatively new compared with CRT technology. The CRT hasn't changed much in the past half-century, but the most common flat-panel technology, the LCD screen, keeps evolving.

A CRT is really just an electron gun — a stream of focused electricity — aimed at the back side of a screen covered with colored dots called phosphors. When the stream of electrons hits a dot, it lights up, then slowly grows dim again. The electron gun's beam sweeps back and forth and from top to bottom across a CRT's screen, shooting at specific colored dots to display an image.

But because the beam lights up phosphor dots one by one, CRT screens flicker slightly, even when the image isn't moving. And the sharpness depends on the number and size of phosphor dots and how accurately the electron gun finds its target.

In contrast, every pixel on an LCD flat-panel display is separately wired and can be turned on or off independently. That eliminates flicker — but it raises the cost of building the display.

Improvements in LCD manufacturing technology are pushing the price-per-pixel down, and LCD screen makers are also getting the benefits of economies of scale. The number of LCD screens made should jump from 3.9 million units this year to 10 million in 2001, according to market analysis firm DisplaySearch in Austin, Texas.

But another thing that raises the cost of LCDs is the fact that the display units aren't interchangeable.

LCD screens from different manufacturers require different wiring; even the holes for mounting screws are in different positions. That means laptop and stand-alone display makers must retool to use LCD screens from different sources.

That's about to change. In October, five laptop makers agreed on a standard for electrical and physical flat-screen specifications. Compaq Computer Corp., Dell Computer Corp., Hewlett-Packard Co., IBM and Toshiba Corp., who together hold more than half of the laptop market, formed the Standard Panels Working Group last year and hashed out an agreement in a few months.

Many major LCD screen makers have agreed to conform to the new standard, and LCD displays that match it should begin appearing by August. That should help push prices down by 40% to 50% by the end of 2001, says Ross Young, president of DisplaySearch.

Another change that will cut costs for stand-alone flat screens is the shift from analog display interfaces, such as PC-standard VGA, to digital. CRTs are designed to use analog interfaces, while LCD displays are digital; stand-alone flat-panel displays must convert analog signals to digital, requiring extra circuitry.

Expect to see both PCs and monitors with both analog and digital connections in the next year, says Rhoda Alexander, an analyst at Stanford Resources Inc. in San Jose.

A CRT's screen is covered with phosphor dots that are lit up one at a time; an LCD's pixels are individually wired to light up independently

AT A GLANCE

Worth the Price?

LCD screens have several advantages compared with traditional CRT displays.

- LCDs don't waste space at the borders of the screen as CRTs do. A 15-in. LCD screen is the equivalent of a 17-in. CRT monitor.
- LCD displays are much lighter than CRT monitors - 13 lb. vs. 40 lb. for a stand-alone CRT display.
- LCD displays use much less electricity than CRTs - 25 watts vs. 130 watts.

MORE ONLINE

For more information about flat-panel displays, visit our Web site.
www.computerworld.com/more

Are there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to quickstudy@computerworld.com.

Hyperextending your PALM

Pick up where IT support leaves off. Add these 10 tools to your Palm By Mathew Schwartz

PERSONAL informatioo management: Maybe you've heard the phrase before. It's one of the hallmarks of Palm Computing Inc. devices, which give you a place to aggregate everything from your address book to your checkbook, from travel expenses to random ideas you have in a meeting or on the subway.

Because people have embraced handheld computers in a very grassroots fashion, they create usability issues. For one, most information technology departments are still debating how they should support Palms — if at all. Hence, if a Palm breaks down, a user doesn't necessarily have his IT department to turn to.

Pricing

The following are prices for the products mentioned in this article:

AvantGo/AvantGo Inc./Free.
Datebk3/Pimlico Software Inc./$20.
Dubylite/Teonce Co./$9.95.
STRIP/Zaletic Enterprises/Free.
BackupBuddy/BackupBuddy Inc./$29.95.
Breakaway Mobile Edition/Aportis Technologies Corp./$30.
FlashPro and FlashPunk/TRG Products Inc./$29.95 and $19.95; bundled, $39.95.
TeaScript/TeaPoint Software/$16.95.
AportisDoc/Aportis Technologies Corp./$30.

To try any of these products, visit www.palm.com. For more tool suggestions, visit www.palmstation.com/computerworld.jsp.

Then there are software enhancements. Just as most home users install more than the "free" applications that show up on their Dells or Gateways, business users expect the IT department to load up their machines with the latest business software. But again, because Palms are generally unsupported, it's now up to the person who wants to use one to find, install, learn how to use and maintain any additional Palm applications.

Which isn't to say that the Palm isn't ready to work. As shipped, it serves four functions very well with its built-in software: that of a date book, address book, to-do list and memo pad. But most people want more.

So while the jury's still out on who should support what, here's a sampling of 10 applications that can help you get the most out of your Palm, whether you're an IT manager, business user or someone who just has to have one.

Web Without Wires

While Palm wireless modems aren't ubiquitous or inexpensive, who says you can't access Web pages on your Palm?

AvantGo is an application that lets you download Web pages to your Palm for off-line browsing. Any Web page. And best of all, this killer application is free. Not convinced?

Enter partners. A whole bunch of sites — from *Wired* magazine to *TV Guide* — have optimized pages for AvantGo users, so the content you read is free of any formatting problems or large graphics. I'm not downloading the whole of *The New York Times*, just what its editors deem the day's top stories. But for a daily news blast, it's great.

Another plus: Every time I synchronize my Palm with my PC — at least once per day — the Web conteot is refreshed.

Even if you have a wireless modem, AvantGo saves usage charges for pages that don't have to be accessed in real time. For commuters, it's great for reading online content, especially given the clarity and resolution of today's Palm screens. The only problem is, you'll find yourself downloading so much content that you'll need to get more memory for your Palm.

The Essential Scheduler

Type-A personality characteristics be damned: Some people think organization is the key to happiness. If that's you, then the first thing to do is to chuck your Palm's current Datebook program in favor of **Datebk3**.

Take it from a hard-core user: Datebk3 is a must. It adds more than 40 new features: floating events that stick around until done; more views of your time, including an excellent list format; and icons and templates for events. It even brings your to-do list into the date book, where it does a lot more good. Most of its features are so intuitive that you don't even need to refer to Datebk's 50-page manual. Yes, at 260K bytes, it's a rather large Palm application, but it's so good that Handspring Inc. in Mountain View, Calif., licensed a version to ship on its new Palm-compatible Visors as the "advanced" Datebook program.

Security

Security is a major concern for anyone who uses a personal digital assistant, and Palms, as shipped, aren't secure computing devices. Two types of programs help ameliorate this shortcoming: access-control programs and encryption programs.

From the access-control perspective,

a program called **OnlyMe** pops up a password-protected screen every time you turn on your Palm or try to Hotsync with it. Without a password, only your contact information is available to anyone who powers up the Palm. Passwords can be any combination of OnlyMe's on-screen boxes, the Palm's buttons or writing with the stylus. If you're powering your Palm up and down quite frequently and don't want a screen every time, you can set a lock delay, so OnlyMe won't lock your Palm until it's been off for a specific period of time, which is quite useful.

Some people might not want to lock their Palms; hey, who's going to try and crack your recipe database? But almost everyone could benefit from selective encryption, such as an account- and password-management program called **Secure Tool for Recalling Important Passwords (STRIP)**. STRIP uses heavy-duty, 128-bit triple-Data Encryption Standard to store information, and that means any information — credit-card numbers, Web site accounts and voice-mail access codes. STRIP is also a great tool for IT managers who administer distributed environments. It can random-generate complex passwords and allows account information to be beamed between Palms, so the IT staff can stay up-to-date.

Do You Know Where Your Data Is?

Though my Palm occasionally crashes, I've never lost any data. Still, if I did, you can imagine how long it would take to reinstall the applications I lost, never mind the data. I'm a backup fiend, and **BackupBuddy** fits the bill: It lets me back up some or all the information and applications on my Palm every time I synchronize. In the event that my Palm loses data, I simply synchronize it with my PC, and the information will be restored from my last backup.

In case you're with the IT department or upgrading to a new Palm, read on: BackupBuddy is also a great installation and migration tool. If you have to install similar software on lots of Palms, you can configure one, then synchronize all the others. If you're upgrading to a new Palm, BackupBuddy will automatically load all of your old information onto the new one.

Productivity

Personal information management is one of the mantras of small, portable computing devices. Unfortunately, most computer programs make you think the way they do. By contrast, **Brainforest** takes the free-form approach. It lets you record ideas and action items, or plan projects through an intuitive and simple outlining interface, and then customize how that information is viewed.

Brainforest's metaphor is that of trees, branches and leaves, but anyone who has endured eighth-grade social studies will recognize that these are good old outlines. Various permutations are possible: checklists, outlines, project tracking. That last feature is worth noting: Brainforest lets you indicate hierarchical relationships. Brainforest files also export easily to other built-in Palm applications, such as the to-do list, or to stand-alone Brainforest software on a Macintosh or PC. (Currently, only the Macintosh stand-alone program is available.)

When 8M Bytes Isn't Enough

Call it scope creep. You've got pictures of the kids, a small library of documents, a few hundred kilobytes of downloaded Web pages, and all of a sudden, your Palm is full. Sure, you can upgrade the physical memory or buy a new Palm, but how about using a software program that frees up an available 800K bytes of memory? Nope, it's not compression. It turns out that the Palm doesn't store its core applications, or its operating system and upgrades, in regular RAM. Instead, they're in some of the 2M bytes of its nonvolatile flash memory.

Though that remaining free space is normally inaccessible, a program called **FlashPro** opens up the space on Palm models V, Vx, III and IIIx, letting you use it to store such things as Palm application files.

In case you're *really* into backing things up, a related program, **FlashPack**, lets you schedule automatic backups of important Palm files and databases from the Palm's regular memory into flash memory. This is useful, especially if you're not near a computer to sync and back up your Palm. (Programs such as BackupBuddy require regularly synching the Palm with a PC in order to be effective.) By storing files in flash memory, they'll be available even if you have to hard reset the Palm. Note that this does obviate some security schemes (see OnlyMe).

Penmanship

Palm relies on a software program known as Graffiti to read which letters and numbers you scribble on the Palm's writing area. Rather than going all out and recognizing any old thing you write, Palm meets you half-way: You have to learn its alphabet, which consists of simplified letter patterns.

But not all of us can draw straight lines. That's where **ToolScript** comes in. It lets you completely reconfigure Graffiti with an arsenal of character-recognition tools which cater to both basic and advanced users.

For instance, you can train Graffiti to better recognize your style of writing by running through a few dummy sentences. There's also a diagnostic which tracks which of your characters Graffiti has the hardest time recognizing. Finally, you can also redefine or add new character patterns yourself and set recognition thresholds to fine-tune performance.

Document Reader

Whereas AvantGo is excellent for public or personal HTML content, if you want to read text or Word files, it's a lot easier to use a document reader such as **AportisDoc**. Use free third-party software to translate text or HTML files into AportisDoc files. Even better, the files are compressed and thus smaller than the equivalent text file would be, saving space on your Palm. Excellent if you need to carry reference manuals or want to read a good book — lots of free content is available on the Web in AportisDoc format. ▶

10 More Goodies

Laundry lists always miss something or other. Nevertheless, here are a few other interesting applications, out of many, that merit special attention:

AreaCodes (Intrepid Software Solutions Inc., $7) is great for anyone trying to figure out where a sales prospect with, say, an 815 area code lives.

DateMate (Common Sense, $19.95) lets you define an "address list" field for birthdays and anniversaries, then the program will load and alarm those important dates in your Palm's Datebook.

Jille (Land-J Technologies, $24.95) and **HandBase** (DOH Software, $19.99) are very full-featured database programs for the Palm with many similar features. Both are excellent.

Memo Plus (Hands High Software Inc., $19.95) is a new take on the standard Memo Pad program, adding templates, drawings, a new interface and pages that can be alarmed.

MagicText (Synergy Solutions Inc., $17.95) allows easy access to copy and paste functions, as well as dedicated extensions such as encryption and date/time stamping.

Launcher III (Benc Software Production, free) organizes the Palm's applications into easy-to-use tabbed windows.

AddressPro (Jacob Zinger, $19.95) is a pricey but efficient way to upgrade the Palm's Address Book to include such things as better searching, find and replace and formatting enhancements.

Pocket Quicken (LandWare Inc., $39.95) brings Quicken to the Palm, which makes keeping your expense reports up-to-date that much easier.

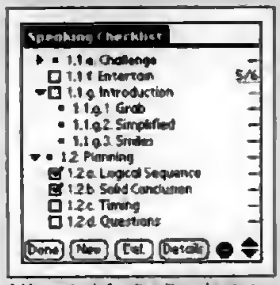
AlbumToGo (Club Photo Inc., free) turns the Palm into a weapon in the arms of new parents, by letting you save images to your Palm (though the whites look a little green, given the Palm's screen).

Basics Made Better

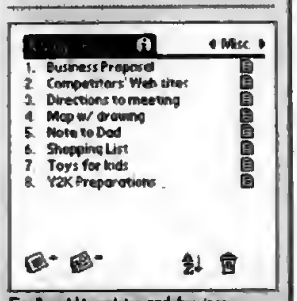
If you want more functionality from the Palm's four main applications, you can upgrade to great third-party software. Here are four enhancements, accompanied by their screenshots:

Trade the Date Book for DateBk3, which adds such things as icons to your calendar.

Get better address book formatting with Address+.



Add more to-do functionality and project planning with Brainforest.



Finally, add templates and drawings to your memos with Memo Plus.

Internet Content Decency Debate

BY LESLIE GOFF

THE INTERNET might be a very different place today — and webmasters might be operating at considerable personal risk — had a law that was passed in 1996 not been overturned by the Supreme Court.

When President Bill Clinton signed the Telecommunications Deregulation and Reform Act into law on Feb. 1, 1996, he ushered in one of the biggest debates of the year. Embedded in the Telecommunications Act was the Communications Decency Act, sponsored by former Sen. James Exon (D-Neb.) and former Sen. Daniel Coats (R-Ind.). Introduced under the guise of protecting children from online pornography, the Communications Decency Act allowed $250,000 fines and prison terms of up to two years for the transmission of "indecent" material over the Net.

The law would have subjected all forms of Internet content to legal scrutiny and, ultimately, could have stifled the growth of the Web.

Imagine if Amazon.com Inc. couldn't sell Helen Gurley Brown's *Sex and the Single Girl* or if HBO.com couldn't promote the hit show *Sex and the City*. What if the Planned Parenthood Federation of America Inc. couldn't post online advice about how to avoid pregnancy? Consider the outcome if corporate Web sites had to run their content by an attorney to avoid the possibility of prosecution.

"The law was so broad that it would have threatened the very existence of the Internet," says Ann Beeson, a senior staff attorney for cyberliberties at the American Civil Liberties Union (ACLU) in New York. "A lot of businesses never would have come online, because the risk would have been too great."

THE SPONSORS "depicted the law as protecting children, and it got through," says Brad Templeton

Even as President Clinton was signing the bill, Beeson and other ACLU attorneys were in the U.S. District Court in Philadelphia challenging the constitutionality of the law on behalf of 19 plaintiffs, she recalls. Almost immediately, some 500 Web sites protested the bill by darkening their screens.

First Amendment Outcry

The Achilles' heel of the Communications Decency Act was its broad language and vague definition of *indecent*, a standard left to individual communities to decide. The act's opponents also argued that it rendered the Net a second-class news medium that was somehow not entitled First Amendment protections.

The act's strength, in the view of its supporters, was its focus on children. In a Feb. 19, 1996, editorial for *Computerworld*, Exon wrote, "A child can get on the information superhighway and freely ride to online 'red-light districts' that contain some of the most perverse and depraved pornographic material available." The act "could help to ensure that our kids have a chance to travel safely through cyberspace," he contended.

"It's very hard for members of Congress not to support a law that paints itself as protecting children," says Brad Templeton, founder of ClariNet Communications Corp., a San Jose-based online news service that was one of the plaintiffs in the suit. "It's the common error of all debates that if you're not in favor of banning something, you must be for it. So [the sponsors] depicted the law as protecting children, and it got through."

It also helped that the law was part of the larger telecommunications reform bill that aimed to permit freer competition among phone, cable and TV companies. And yet even Congress seemed to know the law was on shaky constitutional ground. A special provision in the act put it on a fast track to the Supreme Court.

The Philadelphia District Court initially imposed a restraining order to prohibit enforcement of the law. The court then joined the ACLU suit to a similar challenge introduced by a group called the Citizens Internet Empowerment Coalition, which represented numerous computer industry vendors and other organizations. In June, a three-judge panel issued a 200-page opinion striking down the law.

District Court Judge Stewart Dalzell wrote that any "content-based regulation of the Internet, no matter how benign the purpose, could burn the global village to roast the pig."

He added, "The Internet may be fairly regarded as a never-ending worldwide conversation. The government may not . . . interrupt that conversation."

The Appeal

The Justice Department appealed to the Supreme Court, and in December, the court scheduled oral arguments in the case. In June 1997, in a unanimous decision, the highest court in the land ruled the law unconstitutional and declared that the Internet must be afforded "the highest protection available under the First Amendment."

"Champagne was flowing in the [ACLU] office," recalls Beeson. "It's very unusual to get a unanimous decision from the Supreme Court, especially on First Amendment issues."

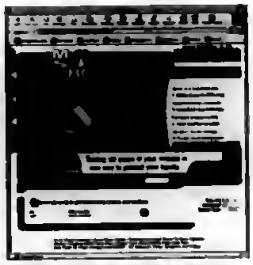
In retrospect, it seems a given that the law would be overturned, but at the time, no one knew what the outcome would be, Beeson notes, "It could have gone either way."

Had it not been overturned, cyberspace would have become a much-too-expensive venue in which to do business, says Andrew Kraft, executive director of the Association for Internet Professionals in New York. "It would have become much too dangerous to be involved with content. And on the Net, content is king."

Goff is a frequent contributor to Computerworld. Contact her at lgoff@ix.netcom.com.

Technology Happenings

- **CD-rewritable (CD-RW)** technology is announced.
- **Hackers** deface the Web sites of the **U.S. Department of Justice**, the **CIA** and the **U.S. Air Force**.
- Microsoft announces **ActiveX Technologies**, a set of Internet application development tools. The company also acquires **Vermeer Technologies Inc.**, maker of the FrontPage Web tool.



- **Microsoft Corp.** and **NBC** debut **MSNBC**, a 24-hour cable news network and companion Web site, on July 15.
- **Sun Microsystems Inc.** introduces the 64-bit **Ultra** workstation family.
- In January, **Apple Computer Inc.** asks CEO **Michael Spindler** to resign, and **Gil Amelio** takes the reins. In December, Apple acquires **Next Software Inc.**, bringing company cofounder **Steve Jobs** back into the fold.
- **Lotus Development Corp.** releases **Domino**.
- Browser developer **Netscape Communications Corp.** files a complaint with the **Department of Justice**, alleging that Microsoft engaged in anticompetitive practices by putting its **Internet Explorer** browser on users' desktops.
- Two weeks before Christmas, researchers at **O'Reilly & Associates Inc.** release findings that most Web sites aren't secure enough to handle e-commerce transactions.
- **Sen. Daniel Patrick Moynihan** warns President Clinton of the "extreme negative economic consequences" that the **year 2000** issue poses.

Other Notables

- Clinton appoints **Madeleine Albright** the first female U.S. secretary of state.
- ***Rent*** debuts on Broadway.
- **Best Picture:** *The English Patient*

Flashback is produced with the assistance of The Computer Museum History Center in Mountain View, Calif.

Commerce Secretary Ronald H. Brown is killed in a plane crash in Croatia.

The FBI arrests Unabomber Theodore Kaczynski.

TWA Flight 800 crashes in the Atlantic off of Long Island, N.Y.; all 230 aboard perish.

Congress passes the welfare reform bill; Clinton approves it.

JANUARY | FEBRUARY | MARCH | APRIL | MAY | JUNE | JULY | AUGUST | SEPTEMBER | OCTOBER | NOVEMBER | DECEMBER

President Clinton blocks a ban on late-term abortions.

A ValuJet plane crashes in the Everglades, killing all 110 on board.

A bomb goes off at the Summer Olympic Games in Atlanta, killing one.

Clinton is re-elected.

Better address?

Better compensation?

Better training?

Better get in here.

ITcareers.com
where the best get better

Power Plays

Deregulation of the utility industry is just beginning in earnest. But utilities are already replacing their monopoly mentality with a new competitive spirit. Many are turning to their IT organizations to lead the way, creating greater career opportunities
By Candee Wilde

TO SURVIVE AND FLOURISH, utility companies are replacing meter readers with wireless data networks. They're swapping mainframe systems for integrated client/server systems and shared databases. And they're evaluating e-commerce and even brand-new businesses, such as telecommunications. Their primary goals are improving customer service, cutting costs and expanding their core operations beyond a commodity business.

As utilities overhaul legacy systems and introduce new technology, the role of information technology professionals is changing. When utilities are regulated in terms of rates, profits and quality of service, as they have been for the past century, IT departments largely play a support role, according to Joe Popham, manager of information services at Powder River Energy Corp. (PRECorp), a rural electric cooperative in Sundance, Wyo.

"Management dreamed up the ideas, [and] IT was called on to make it happen," Popham explains. "Now IT is being pressed to come up with the ideas, sell them, develop them, deploy them and take responsibility for what happens."

Consequently, utilities need IT employees who combine general business management skills with knowledge of systems integration, customer informatioo systems, the Internet, radio and satellite systems, database managemeot and more, Popham says. Veteran IT staffers need to augment their business skills to take part in developing their companies' long-term strategies and how their jobs tie to the company's mission. New recruits should study the energy business.

John Keast, vice president and CIO at Pacific Gas & Electric Co., an energy services holding company in San Francisco, says he needs three key types of skills on his team: familiarity with Internet technologies, systems integration and an ability to design efficient business processes. Like many utilities, PG&E is focusing on e-commerce, which requires staffers who can work with application programming interfaces and middleware to tie internal systems to the Internet. Adding new applications, usually purchased off the shelf, requires systems integrators. Perhaps the most pressing need, according to Keast, is for business-process developers.

> We are doing a lot less application development and a lot more buying of packaged apps.
>
> DAVID SAMUEL (BELOW), VICE PRESIDENT, NSTAR INFORMATION SERVICES

"These people sometimes come out of the IT ranks but more often come from the traditional business side — people who have experience in supply-chain and operational business processes and whose performance has been measured by how efficiently they do things," Keast says.

Utilities tend to be more conservative than other industries, according to Stacy Simpson, a partner at Power Recruiting Group in Sugar Land, Texas. "They are just now getting more accounting and financial packages that are more up to date," she says.

Simpson, who specializes in recruiting IT professionals for utilities, says her clients are seeking Java developers to work with Web-based applications and Oracle experts who can focus on accounting and financial applications. Database administrators are also in demand.

NSTAR is an energy-delivery company in Boston that's growing quickly through mergers and acquisitions. Because it delivers energy, as opposed to selling or manufacturing it, NSTAR's information systems need to be customer-service-oriented. To that end, the firm is migrating to a client/server platform from its mainframe systems, a process that's almost halfway complete, says David Samuel, vice president of NSTAR Information Services.

"We are in an industry that is moving quickly, so we are doing a lot less application development and a lot more buying of packaged applications that we can string together," Samuel explains. "Now I'm interested in people with skills in systems integration, middleware and high-performance project management. Our projects have to be delivered on time and under budget."

Wilde is a freelance writer in Easton, Conn.

CAREER PERSPECTIVES

What they're saying...

"Running a dynamic profit-motivated business has a completely different set of rules. The best way to is to find those individuals who would like the challenge of changing a long-established monopoly."

– Joe Popham
Information services manager, PRECorp

"IP skills are becoming a premium for us, to manage communication throughout the company and how we communicate with customers and suppliers."

– David Samuel
Vice president, NSTAR Information Services

"There is a big demand for electronic commerce/EDI people. All utilities are trying to figure out how to add new value. They need e-commerce specialists to help them provide better customer information, support and interaction."

– Jon Arnold
CIO, Edison Electric Institute, Washington

"Our IT strategy is to buy products rather than build systems. We need architects and engineers to put the jigsaw together and keep it tuned."

– John Keast
Vice president and CIO, PG&E

"The last 24 to 36 months have been an all-out attack on Y2K. In some ways, it has accelerated IT development. If you have a Y2K problem with a system, you have to evaluate whether it's worth putting a Band-Aid on it or if you should move on to the next level of technology. A lot of people chose the latter."

– Michael Hyland
Director of engineering services, American Public Power Association, Washington

Programmer/Analyst: Analyzes, designs, develops, documents, implements, and programs various Oracle relational database management information software systems to ensure that various module application areas are properly implemented and integrated into the entire information system to insure proper data flow and proper data access as required by and users. Analyzes systems requirements to develop high level system procedures as well as developing related documentation to ensure that application implementations can form into and users data requirements. Develops application procedures in conjunction with other information systems personnel. Uses Oracle Developer 2000 and other related software tools in a UNIX operating system to enhance various sales related modules in compliance with Year 2000 standards. Requires Master's degree in Computer Science. Hours: 8:00 a.m. - 5:00 p.m. 40 hours per week at $43,000.00 per year salary. Two copies of resume to Gerald L. Gulseth, File #C101038, DWE-ALC, P.O. Box 7972, Madison, WI 53707-7972.

Texas network & system management software development firm has opening for IMS/DBMS System Software Engineer. Designs & writes code for IMS/DL-1 systems software running on OS/390. Responsible for creation & execution of regression tests and for technical support to customers. Requires Bachelor's degree in Computer Science or equivalent through experience and three years experience in 390 Assembler language for IMS/DL-1 systems. Send resume to PBTC, 6034 W Courtyard Dr., #230, Austin, TX 78730.

Senior Systems Engineer: Works within the company's Magnetic Resonance (MR) Systems Engineering division to provide and define requirements at the system subsystem and component levels. Defines, supervises, and executes test plans and procedures. Interprets and analyzes and results and data. Models, analyzes and designs new processes and required product changes. Implements proprietary algorithms to improve MR images. Optimizes algorithms for speed, while maintaining image quality. Develops customized software tools for quantitative automated image quality assessment in phantoms and patients. Writes technical reports and standard operator procedures for of new image quality tools developed. Works with doctors at hospitals and universities to develop and design new features to improve the quality and speed of the MR imaging. Assists technical problems faced by radiologists with regard to image quality. Required is a Master of Science degree in Electrical or Computer Engineering and two (2) years of experience in the position being offered (i.e., Senior Systems Engineer) or two (2) years of experience as a Systems Engineer or Graduate Assistant. As part of the required experience in the position being offered or in the related occupation, the applicant must have had experience in developing and implementing medical image algorithms for Magnetic Resonance using C on SGI and SUN SPARC workstations, had experience in developing digital signal processing (DSP) and image processing algorithms using C and MATLAB on UNIX, Window95, Window 3.1 and Window NT, had experience with UNIX Bourne Shell programming and had experience in developing and implementing new medical image processing algorithms for Magnetic Resonance Imaging, Positron Emission Tomography, or Computed Tomography. Monday through Friday 8:00 AM to 5:00 PM, 40 hours per week, $65,000 annually. Qualified applicants can submit two (2) copies of resume and cover letter to Mike Brooks, File #C101227, DWE-ALC, PO Box 7972, Madison, Wisconsin 53707-7972; Reference File #C101227.

CT Growth Lead Program Integrator: Serves in a key role in achieving top line growth for the CT (Computed Tomography) business on behalf of global manufacturer of medical diagnostic equipment. Works closely with customers, marketing and engineering to define new options to be offered to CT customers. Identifies and proposes the best development options relating to internal development, out-sourced development or off the shelf. Leads the cross-functional team in defining requirements, program planning, program execution and control system integration and validation against customer requirements. Proposes and achieves timely solutions to customer needs and leads multiple projects in parallel. Required is a Master of Science degree in Biomedical Engineering and two (2) years of experience in the position being offered (i.e. CT Growth Lead Program Integrator) OR two (2) years of experience in the related occupation of Software Engineer. As part of the required experience in the position being offered or in the related occupation, the applicant must have had experience in leading other engineers and technicians in medical equipment development, in translating the requirements of medical practitioners into software or hardware designs, and in testing and validating product features against customer requirements. Employer prefers previous experience in designing, developing and implementing application software and platform hardware for CT scanners. Monday through Friday: 8:00 AM to 5:00 PM, 40 hours per week, $61,000 annually. Qualified applicants submit two (2) copies of resume and cover letter to: Gerald Gulseth File #C101060, DWE-ALC, PO Box 7972, Madison, Wisconsin 53707-7972. Reference File #C101060

Software Engineer: Designs and develops software applications for the company's CT (Computed Tomography) scanners using six sigma methodologies. Develops diagnostic software to troubleshoot and repair CT scanners. Develops Graphical User Interfaces (GUI) that can be accessed both locally on the CT scanner and remotely at the company's online center via a web-browser. Develops calibration software used to install set up and ensure the trouble free operation of the CT scanner and its image reconstruction subsystem, and to ensure proper dose reductions as required by the FDA and other regulatory bodies in Europe and Asia. Develops service software essential to pro-active detection resolution of problems at customer sites. Develops libraries and API's essential to the quick development and deployment of diagnostic software investigates and improves the design and development environment required to improve the efficiency of coworkers and future developers. Develops network communications software to ensure quick, reliable communications between different software sub-systems and between the CT scanner and the host software. Leads sub-systems teams to develop new service and diagnostic features and port existing software features to next generation products. Monitors and promptly resolves problems in existing software sub-systems. Designs and develops new service software features and modifies existing software based upon requirements from other departments such as manufacturing and detection. Develops standards and techniques used for development of other software features within the CT software environment. Conducts new technology concept reviews and feasibility studies. Integrates new technologies and concepts with the existing CT software environment. Participates and interacts with cross-modality groups in designing and developing new product features and applications. Participates in unit-level and sub-system level testing and validation of new product application releases. Mentors summer interns and employees. Required is a Master of Science degree in Computer Science and two (2) years of experience in the position being offered OR two (2) years of experience in the related occupation of Graduate Research Assistant or Engineer. As part of the required experience in the position being offered or in the related occupation, the applicant must have had experience with the entire software development life-cycle; had experience with UNIX, C, C++, Java, HTML, CGI, Perl, JavaScript, Motif and Shell scripts; had experience with UNIX internals, threads, multi-processing, inter process communications, such as sockets and RPC, networking protocols, such as TCP/IP file handling, GUI design and object oriented programming; and had experience with debuggers, such as cvd, dbx, purify and Source code control software such as clearcase. Monday through Friday 9:00 AM to 6:00 PM, 40 hours per week, $65,000 annually. Qualified applicants submit two (2) copies of resume and cover letter to Mike Brooks File #C101251 DWE-ALC, PO Box 7972, Madison, Wisconsin 53707-7972. Reference File #C101251

MIS Manager sought by Translation Services Co. in Houston, TX. Must have BS in Comp Info Systems & 1 yr exp proving s/ware & n/working support and evaluating & recommending new software & h/ware. Respond by resume to HR Dept, Sharper Translation Services, Inc., 10700 Richmond Ave., #100, Houston, TX 77042

DIRECTOR, GOVERNMENT SYSTEMS

The Mashantucket Pequot Tribal Nation is currently seeking an application development director to manage their Government Systems group. Mashantucket Information Systems provides information technology and communications services to the Mashantucket Pequot Tribal Nation and its enterprises, including Foxwoods Resort Casino, several hotels, restaurants, golf courses and a museum.

Responsibilities of this position include

- **Defining, staffing and implementing all levels of system development projects**
- **On-going support and enhancements to an extensive base of legacy systems**
- **Managing effective user communications and relationships throughout the government departments and business areas**

Qualified candidates will possess:

- **A master's degree in Information Systems, Computer Science, Business Administration, Public Administration or related field**
- **A minimum of 10 years experience in the information systems area including 5 years experience managing individuals, teams and large projects**
- **Knowledge of Lotus Notes or groupware systems, local, state or federal government systems.**
- **Experience with electronic voting systems is a plus**

Located in beautiful Southeastern Connecticut, we offer a competitive salary package, extensive medical, dental and vision care programs including a co-cost prescription program, 401 (k) plans, training and advancement opportunities, paid personal time off. For immediate consideration, send your resume and salary requirements to

Mashantucket Pequot Tribal Nation
Attn: Human Resources
Route 2, PO Box 5777
Mashantucket, CT 06339-5777
Email: resumes@mptn.org
Fax: (860) 312-1999

The Mashantucket Pequot Tribal Nation practices Indian preference in hiring. (PL 93-638) and is an AA/EOE.

IT Opportunities

Metamor Global Solutions ("MGS"), a subsidiary of Metamor Worldwide, is an established international IT solutions and services company. We provide our employees with a competitive compensation package and an excellent benefits package.

Currently MGS has multiple openings at our corporate office in Irvine, and at project sites throughout the United States, for the positions referenced below

Software Engineer
Sr. Software Engineer I
Sr. Software Engineer II
Project Manager
Project Leader I
Project Leader II
Network Administrator I
Network Administrator II
Director Account Management

Please send a letter of introduction (indicating position of interest) along with resume, salary history and requirements to: **MGS, Inc., Attn: J.L. Fisher, CW/1129, 133 Technology Drive, Suite 200, Irvine, CA 92618 FAX: 949-450-4658 or e-mail us at: jlf.resume@metamorgs.com** EOE

METAMOR

PowerBuilder / MS-SQL Application Developers

INDEPENDENCE INVESTMENT ASSOCIATES, a Boston-area investment firm engaged in institutional money management, has an immediate need to fill a range of PowerBuilder / MS-SQL Application Developer positions relevant to our business. These positions will be responsible for some or all phases of customized software application development in support of the Company's investment management-related services

- Bachelor's-level degree (or equivalent) in Computer Science or similarly relevant field.
- Three (3) to eight (8) years experience (depending on level of position sought) involving all phases of structured software application development and support.
- All positions require the demonstrated ability to utilize PowerBuilder and Microsoft SQL Server in the development process.
- More senior level positions require the demonstrated ability to introduce new techniques, technologies, systems, and project management skills to the application development process.
- Starting salaries range from $50,000 to $90,000+ per year, together with fifteen (15) days paid vacation, medical and life insurances, and other industry-competitive benefits.

Respond with resume only to: Ms. Frances Fitzgerald Brian, Senior Vice President, Systems & Operations, Independence Investment Associates, Inc., 53 State Street, Boston, MA 02109. An EOE/M/F/H/V

Senior Engineer to be responsible for the design, development, testing, maintenance and documenting of real-time information management embedded software in the C programming language for RoadRelay 4 (an MC68332 Motorola Processor based product). Develop high level designs that provide a detailed coding structure using the Visio drawing package. Develop low level designs that provide a logical framework. Support peer reviews of work products. Support configuration management of work products. Test/debug software using emulators and background debuggers. Develop network based communication software such as J1587 and J1939. Program real-time information software. Design a user interface for man-machine products. Must have a Master of Science degree in Electrical Engineering with five years experience as a Senior Engineer or five years experience as a Software Engineer. Must have experience in the following: 1) Testing/debugging software using emulators and background debuggers; 2) Developing network based communication software such as J1587 and J1939; 3) Programming real-time information management software; 4) Designing a user interface for man-machine products; 5) Must have course work in the following: Computer Networks, Advanced Microcomputers, Instrumentation, Control Systems, and Digital Signal Processing. 40 hours per week, 8:00 a.m. to 5:00 p.m., $45,100 per year. Send resume with Social Security Number to the Indiana Department of Workforce Development, 10 N. Senate Ave., Indianapolis, IN 46204-2277, Attention DPG, IO# 8062133. Apply only if in possession of permanent authority to work in the U.S. An employer paid Ad.

Software Engineer (2 openings): Design, develop and implement computer software systems to determine feasibility of design and directs software testing procedures, programming and documentation. Work involves extensive travel and frequent relocation. Must have one year of experience in job offered or as a computer professional as well as one year of experience using: 1 of Group A and 1 of Group B and 1 of Group C; OR 2 of A and 1 of B; OR 2 of A and 1 of C as follows: Group A - DB2, IBM3090, IBM ES9000, MVS, IMS, IDMS; Group B - CL/400, CICS, TSO, VSAM; Group C - TELON, COBOL, JCL, AS/400, RPG/400, COBOL/400. Bachelor's degree in one of several limited fields: Computer Sci/Appl, Eng., Chem., Math or Physics. Salary is $85,000 per/yr, 40 hrs/wk., 9:00 - 5:00 p.m. Please submit resumes to Mr. Tom Dembosky, Manager, Indiana Job Center, 350 N. Fourth Street, Indiana, PA 15701. Reference Job Order No.: 9103887

Technical Team Leader responsible for identifying data to be converted, determining a method for conversion and mapping data from the legacy system to PeopleSoft; performing data conversions into PeopleSoft HRMS and Financials; using PeopleSoft's proprietary programming languages and development tools, developing interfaces to/from PeopleSoft using SQR, client/server development and support; data base administration using PeopleSoft on the Oracle, Sybase, Informix and DB2 relational databases, using the SQL Lab, SQL Station and SQL Tune advanced tuning tools to improve performance of various SQL processes/statements in Oracle, Sybase, DB2 and Informix. Must have Bachelor's degree in Computer Science or Electrical Engineering or Electronics Engineering, together with three years experience in the job offered, or three years experience as a Software Engineer &/or Programmer Analyst. Experience required in the following: 1) developing interfaces to/from PeopleSoft using SQR; 2) implementing PeopleSoft on the Oracle, Sybase, Informix and DB2 relational databases, and 3) using SQL Lab, SQL Station and SQL Tune advanced tuning tools to improve performance of various SQL processes. Course work required in Pascal Programming & Numerical Technology, Computer System Software, Advanced Microprocessor & Applications, & Computer Networks. 40 hours/wk., 8:00 a.m. to 5:00 p.m., $75,000/year. Two copies of resume to Mike Brooks, File C101278, DWE-ALC, P.O. Box 7972, Madison, WI 53707-7972. Reference file #C101278.

Software Engineers (2 openings): Design, develop and implement software systems to determine feasibility of design and directs software testing procedures, programming and documentation. Work involves extensive travel and frequent relocation. Must have one year of experience as a software engineer or computer professional and one year of experience using: 1 of Group A and 1 of Group B and 1 of Group C; OR 1 of A and 2 of B; OR 1 of A and 2 of C as follows: Group A - Windows 3.1, Windows NT, Windows 95, Windows 98, Unix, HP-UX, IRIX, Sun OS; Group B - Visual C++, Visual C, C, C++, Visual Basic, PowerBuilder; Group C - JAVA, TCP/IP, HTML, MFC, CGI, PERL, ASP, COM/DCOM, Active X, MTS. Bachelor's degree or foreign equivalent to one of several limited fields: Computer Sci/Appl, Eng., Chem., Math or Physics. Salary is $85,000 per/yr, 40 hrs/wk., 9:00-5:00 p.m. Please submit resumes to: Ms. Charlene Cogley, Mgr., Beaver Falls Job Center, 2103 Ninth Avenue, Beaver Falls, PA 15010; Job Order No.: 8057795.

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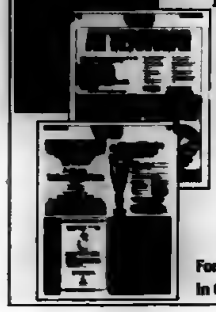

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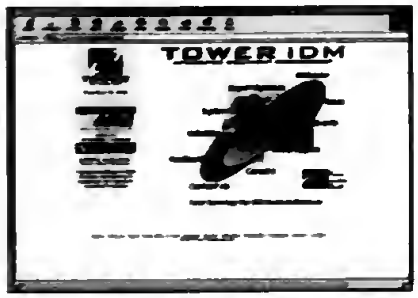

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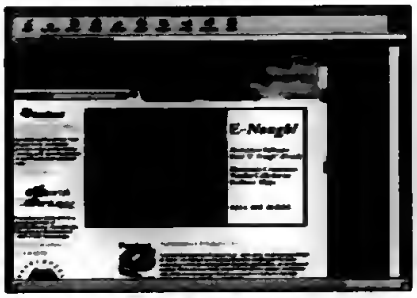

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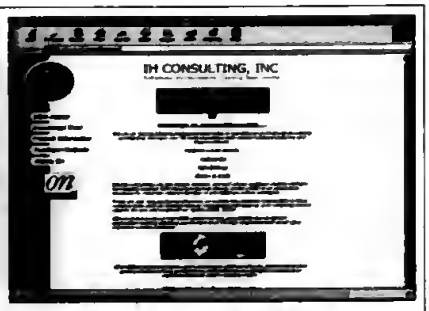

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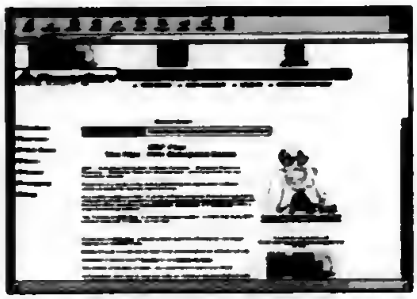

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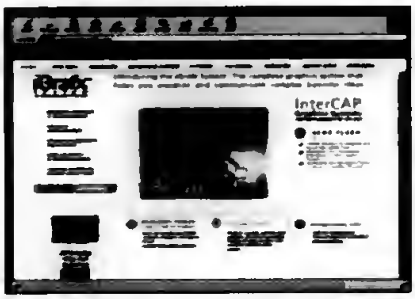

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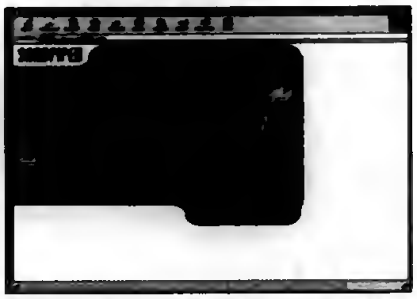

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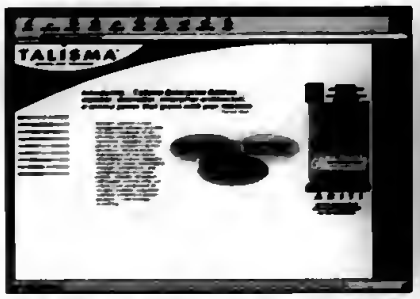

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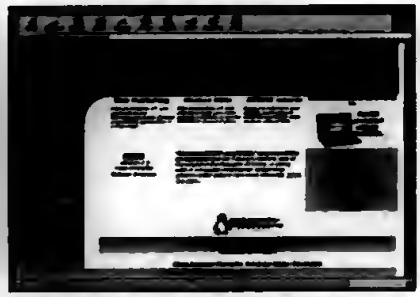

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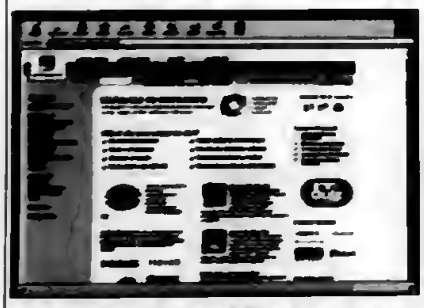

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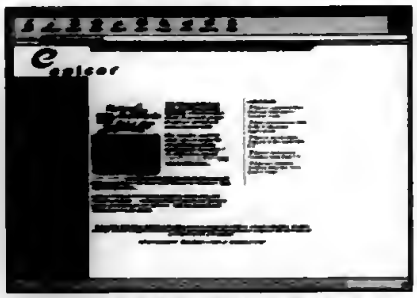

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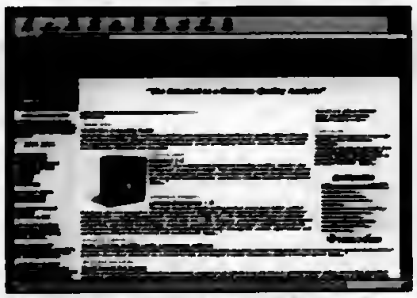

http://www.watchfire.com Watchfire gives organizations the power to ensure the quality of websites by providing software solutions that analyze, isolate and correct problems.

WEEK IN STOCKS

PERCENT		PERCENT	
Procom Tech Inc. (H)	40.1	Open Market Inc. (H)	-47.2
Red Hat Inc. (H)	30.8	Informix Software Inc.	-19.8
Secure Computing Corp.	21.7	Entrust Technologies Inc.	-18.8
eBay Inc.	20.4	Cybercash Inc.	-18.4
Intuit (H)	18.4	Iomega	-18.0
Auspex Systems	18.4	Citrix Systems Inc.	-13.8
Hitachi Ltd. (H)	17.8	Novell Inc.	-11.7
Uniphase (H)	16.1	ETrade Group Inc.	-11.4

DOLLAR		DOLLAR	
Red Hat Inc. (H)	47.00	Juniper Networks Inc.	-18.18
Uniphase (H)	34.00	Citrix Systems Inc.	-12.69
eBay Inc.	30.00	Ariba Inc.	-11.38
Hitachi Ltd. (H)	22.28	Applied Materials	-7.00
Yahoo Inc.	10.25	Tibco Software Inc. (H)	-7.31
NEC (H)	10.25	Motorola (H)	-7.00
Amazon.com	10.25	Motorola (H)	-7.06
Qualcomm	0.00	Open Market Inc. (H)	-8.25

App Integrators Drive Middleware Market

Web companies find value uniting disparate systems

BY LEE COPELAND

IN RECENT MONTHS, application integration tool vendors Tibco Software Inc., Active Software Inc. and Vitria Technology Inc. reaped a bounty from the initial public offering market, fueled by user companies' need to weave together once disparate systems.

These software firms develop behind-the-screen "publish-and-subscribe" middleware technology to get back-office applications to exchange data and transactions with one another and with Web sites.

"What makes this whole area compelling over the last year or so is the notion that integration is the principle challenge to application delivery," says Dan Scholler, an analyst at Meta Group Inc. in Stamford, Conn. Creating e-commerce applications that directly interact with customers and suppliers requires the ability to integrate externally facing components with existing business systems, he added.

Active, Tibco and Vitria (Nasdaq: TIBX, ASWX and VITR, respectively) are "showing exceptional growth, quick sales cycles and large deals," says Tim Klasell, a financial analyst at Dain Rauscher Wessels Inc. in Minneapolis.

These recently public firms have yet to post profitable quarters. But they reported year-over-year sales growth of 283% (Vitria), 243% (Active) and 121% (Tibco) in their most recent earnings announcements. Vitria also reported that customers paid an average of $500,000 to $700,000 for its tools.

"ERP adoption was the driver for integration middleware a while back," says Ross Altman, an analyst at Gartner Group Inc., also in Stamford. "But with the advent of the Web, companies still need to integrate a number of back-end components into finance systems, sales systems and logistics. In the end, the customer wants a Web-based form that knows about everything that occurs in background."

Gartner expects the market for application integration tools to rise from $410 million this year to $1.65 billion by 2003. Altman estimates integration tools can cut development time on projects by 25% to 43%, depending on complexity.

Klasell says the integration tools market is also ripe for more entrants, competitive pricing pressure and the emergence of industry-specific tools. But prices are currently rising, not dropping. ■

Application Integration Fuels IPOs

	OPENING DAY CLOSE	CLOSE ON [illegible]	MARKET CAP
Active Software Inc.	14 (Aug. 13)	67 1/8	$1.65
Tibco Software Inc.	22 15/16 (Aug. 23)	121	$7.38
Vitria Technology Inc.	50 5/8 (Sept. 20)	103 15/16	$3.28

EXCH	52-WEEK HIGH	52-WEEK LOW	NAME	NOV. 19 PRICE	WEEK NET CHANGE	WEEK PCT CHANGE
[illegible]						

EXCH	52-WEEK HIGH	52-WEEK LOW	NAME	NOV. 19 PRICE	WEEK NET CHANGE	WEEK PCT CHANGE
[illegible]						

KEY: (H) = New annual high reached in period
(L) = New annual low reached in period
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E-Commerce Programs Added

IT demand drives need for MBAs' focus

BY JULEKHA DASH

As more graduate business students eye opportunities at Internet companies, several top MBA programs have recently expanded their e-commerce offerings.

Two weeks ago, the University of Pennsylvania's Wharton School announced an e-commerce major for MBA students. The move follows on the heels of Carnegie Mellon University's Graduate School of Industrial Administration offering an e-commerce major and Northwestern University's Kellogg Graduate School of Management launching a technology and e-commerce major.

Although Stanford University's Graduate School of Business doesn't offer majors, the school is in the early stages of launching a $25 million Center for the Study of Electronic Commerce, which will fund e-commerce faculty research and the physical offices for an e-commerce resource center.

Eric Clemons, professor of operations and information management at Wharton, said the school had already been offering e-commerce courses and research initiatives, but recruiters, corporate sponsors and students wanted a more comprehensive program with an official e-commerce label affixed.

"Now, companies like Andersen Consulting will think of us as a first place to recruit" students with e-commerce skills, said Clemons.

Barb Gomolski, research director at Gartner Institute in Eden Prairie, Minn., said the new e-commerce offerings will help companies as more workers enter hybrid information technology business roles. "IT needs that business strategy and direction, and it raises the bar for IT management skill and the level of business knowledge that is required at the management level," she said.

For students with a technology background, e-commerce courses can provide the necessary management skills.

J. Lyn Johnson, a second-year student and e-commerce major at Kellogg, said new courses such as "Customer Experience Design for E-Business" and "Data Mining, Data Warehousing and Business Intelligence" prepare students like her who primarily have business backgrounds but want to join Internet start-ups when they graduate. "At a start-up, you're going to play multiple roles. You have to understand as much of the business as you can," she said.

Carnegie Mellon University, Pittsburgh: Offers an e-commerce major for graduate students and a master's in e-commerce.

University of Virginia, Charlottesville, Va.: Next spring will offer a two-day course on electronic-business terminology, plus e-commerce electives.

Northwestern University, Evanston, Ill.: Has announced a technology and e-commerce major, which includes 16 courses.

The Wharton School, University of Pennsylvania, Philadelphia: Announced an e-commerce major earlier this month. Students can choose one of five tracks, including business-to-business, electronic media and marketing.

Continued from page 1

Students Nixing MBA for Dot-com

school after his summer internship, said he will stay at the Salt Lake City company for two years; then his employer will pay for the two semesters he needs to get his MBA.

Barnes said he stayed for a salary in the $50,000 to $80,000 range, as well as "significant equity" in the company. He left the prestigious MBA program to "make a splash" at an Internet company in its early stages. "If I came back here at the end of next year, my role would be very different," he said. "I wanted to be part of the [company's] strategy and execution and say to my kids 20 years from now that I was part of the Internet revolution."

In general, business school officials said they don't track attrition rates caused by students jumping to Internet-related ventures; those that do reported less dramatic numbers than Wharton.

Northwestern University's Kellogg School of Management in Evanston, Ill., reported that six of 617 students deferred studies to pursue dot-com opportunities, compared with two students who deferred for unspecified reasons last year.

At Carnegie Mellon University in Pittsburgh, six students in the graduate school of industrial administration (an MBA-level program) are at Internet start-ups, although four of them continue to pursue their studies part time. The business graduate school of the University of Texas at Austin, meanwhile, reported an unspecified number of faculty members have left to join Internet start-ups.

MBA students have faced lucrative lures in past hot job markets. But as initial public offerings and venture capitalists pour money into Internet start-ups, the ure may be greater than ever.

Do medium-size and large companies that hope to hire technologically savvy MBAs have a prayer of attracting these sought-after students? Students said yes — if they're giveo a chance to demonstrate their entrepreneurial skills.

Mark Hocking, a second-year Whartoo MBA student who received an undergradoate degree in electrical engineering, said larger companies can lure students by offering them the chance to start a new line of business. Hocking works 20 hours per week at C/Base Inc. in Conshohocken, Pa., which develops online transaction software, while pursuing his MBA full time.

But few MBA students would leave school to work at a user company, said Dennis Wayson, a vice president at Dataquest in Mountain View, Calif. "You don't see them fleeing to work at Dow Chemical. These guys are bailing out to get into [an initial public offering]. They're worried about missing out oo a wave."

And competition from Silicoo Valley is fierce. Whartoo MBA student Ashish Ray, who pursued bachelor's and master's degrees in computer science, said that within five minutes of e-mailing his résumé to a business-to-business e-commerce company, the CEO called to make him an offer.

If more MBA students opt to go to an Internet company rather than return to school right away, this short-term thinking can hurt companies that need people who have a broad-based education to lead technology initiatives, said one analyst. For employers, "the more business background [that employees have] the better," said Barbara Gomolski, research director at Gartner Institute in Eden Prairie, Minn.

Lead or Learn? A CEO's View

When it comes to e-commerce, which experience is more valuable: leading or learning? Internet pioneer **Tim Koogle**, the 47-year-old chairman and CEO of Santa Clara, Calif.-based Yahoo Inc., has received three engineering degrees and speaks of his education's value. Yet he also said, in an interview with *Computerworld*'s Julekha Dash, that there's no substitute for experience.

Q: Can business schools teach you to run an Internet company?
A: I think that an increasing amount of business is technology-enabled – our business and everyone we compete with for sure. You don't have to go way down into the bits and bytes of technology training.

But this is a high-growth industry. The use of technology and scalability, the ability to make a decision on a platform [is useful]. Is your [chief technology officer] or head of engineering . . . making the right decisions in architecture? It all comes down to instinct. If you have good technology training, you can follow your instinct more and can make decisions faster.

Q: What e-commerce course should MBA schools offer?
A: There's great benefit for students looking at different business models on the Web. "New Business Models" as a course, that would be great, because if you train someone instead of repeating [someone else's] mistake, they can look at the fundamental issues of these business models when they're not in the hot seat.

Q: What do you think of MBA students dropping out?
A: I have mixed feelings about that. From my own experience, there's a huge value of having completed all the education that I got, but I'm also a person who believes that what you learn in school is an approach to learning. You learn a lot by doing, and there's no substitute for that. Nothing beats trying something.

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E-Commerce Programs Added

IT demand drives need for MBAs' focus

BY JULEKHA DASH

As more graduate business students eye opportunities at Internet companies, several top MBA programs have recently expanded their e-commerce offerings.

Two weeks ago, the University of Pennsylvania's Wharton School announced an e-commerce major for MBA students. The move follows on the heels of Carnegie Mellon University's Graduate School of Industrial Administration offering an e-commerce major and Northwestern University's Kellogg Graduate School of Management launching a technology and e-commerce major.

Although Stanford University's Graduate School of Business doesn't offer majors, the school is in the early stages of launching a $25 million Center for the Study of Electronic Commerce, which will fund e-commerce faculty research and the physical offices for an e-commerce resource center.

Eric Clemons, professor of operations and information management at Wharton, said the school had already been offering e-commerce courses and research initiatives, but recruiters, corporate sponsors and students wanted a more comprehensive program with an official e-commerce label affixed.

"Now, companies like Andersen Consulting will think of us as a first place to recruit" students with e-commerce skills, said Clemons.

Barb Gumolski, research director at Gartner Institute in Eden Prairie, Minn., said the new e-commerce offerings will help companies as more workers enter hybrid information technology business roles. "IT needs that business strategy and direction, and it raises the bar for IT management skill and the level of business knowledge that is required at the management level," she said.

For students with a technology background, e-commerce courses can provide the necessary management skills.

J. Lyn Johnson, a second-year student and e-commerce major at Kellogg, said new courses such as "Customer Experience Design for E-Business" and "Data Mining, Data Warehousing and Business Intelligence" prepare students like her who primarily have business backgrounds but want to join Internet start-ups when they graduate. "At a start-up, you're going to play multiple roles. You have to understand as much of the business as you can," she said.

Teaching E-Commerce

MBA schools that have expanded their e-commerce offerings:

Carnegie Mellon University, Pittsburgh: Offers an e-commerce major for graduate students and a master's in e-commerce.

University of Virginia, Charlottesville, Va.: Next spring will offer a two-day course on electronic-business terminology, plus e-commerce electives.

Northwestern University, Evanston, Ill.: Has announced a technology and e-commerce major, which includes 16 courses.

The Wharton School, University of Pennsylvania, Philadelphia: Announced an e-commerce major earlier this month. Students can choose one of five tracks, including business-to-business, electronic media and marketing.

Lead or Learn? A CEO's View

When it comes to e-commerce, which experience is more valuable: leading or learning? Internet pioneer **Tim Koogle**, the 47-year-old chairman and CEO of Santa Clara, Calif.-based Yahoo Inc., has received three engineering degrees and speaks of his education's value. Yet he also said, in an interview with *Computerworld*'s Julekha Dash, that there's no substitute for experience.

Q: Can business schools teach you to run an Internet company?
A: I think that an increasing amount of business is technology-enabled – our business and everyone we compete with for sure. You don't have to go way down into the bits and bytes of technology training.

But this is a high-growth industry. The use of technology and scalability, the ability to make a decision on a platform [is useful]. Is your [chief technology officer] or head of engineering ... making the right decisions in architecture? It all comes down to instinct. If you have good technology training, you can follow your instinct more and can make decisions faster.

Q: What e-commerce course should MBA schools offer?
A: There's great benefit for students looking at different business models on the Web. "New Business Models" as a course, that would be great, because if you train someone instead of repeating [someone else's] mistake, they can look at the fundamental issues of these business models when they're not in the hot seat.

Q: What do you think of MBA students dropping out?
A: I have mixed feelings about that. From my own experience, there's a huge value of having completed all the education that I got, but I'm also a person who believes that what you learn in school is an approach to learning. You learn a lot by doing, and there's no substitute for that. Nothing beats trying something.

Continued from page 1

Students Nixing MBA for Dot-com

school after his summer internship, said he will stay at the Salt Lake City company for two years; then his employer will pay for the two semesters he needs to get his MBA.

Barnes said he stayed for a salary in the $50,000 to $80,000 range, as well as "significant equity" in the company. He left the prestigious MBA program to "make a splash" at an Internet company in its early stages. "If I came back here at the end of next year, my role would be very different," he said. "I wanted to be part of the [company's] strategy and execution and say to my kids 20 years from now that I was part of the Internet revolution."

In general, business school officials said they don't track attrition rates caused by students jumping to Internet-related ventures; those that do reported less dramatic numbers than Wharton.

Northwestern University's Kellogg School of Management in Evanston, Ill., reported that six of 617 students deferred studies to pursue dot-com opportunities, compared with two students who deferred for unspecified reasons last year.

At Carnegie Mellon University in Pittsburgh, six students in the graduate school of industrial administration (an MBA-level program) are at Internet start-ups, although four of them continue to pursue their studies part time. The business graduate school of the University of Texas at Austin, meanwhile, reported an unspecified number of faculty members have left to join Internet start-ups.

MBA students have faced lucrative lures in past hot job markets. But as initial public offerings and venture capitalists pour money into Internet start-ups, the lure may be greater than ever.

Do medium-size and large companies that hope to hire technologically savvy MBAs have a prayer of attracting these sought-after students? Students said yes — if they're given a chance to demonstrate their entrepreneurial skills.

Mark Hocking, a second-year Wharton MBA student who received an undergraduate degree in electrical engineering, said larger companies can lure students by offering them the chance to start a new line of business. Hocking works 20 hours per week at C/Base Inc. in Conshohocken, Pa., which develops online transaction software, while pursuing his MBA full time.

But few MBA students would leave school to work at a user company, said Dennis Wayson, a vice president at Dataquest in Mountain View, Calif. "You don't see them fleeing to work at Dow Chemical. These guys are bailing out to get into [an initial public offering]. They're worried about missing out on a wave."

And competition from Silicon Valley is fierce. Wharton MBA student Ashish Ray, who pursued bachelor's and master's degrees in computer science, said that within five minutes of e-mailing his résumé to a business-to-business e-commerce company, the CEO called to make him an offer.

If more MBA students opt to go to an Internet company rather than return to school right away, this short-term thinking can hurt companies that need people who have a broad-based education to lead technology initiatives, said one analyst. For employers, "the more business background [that employees have] the better," said Barbara Gomolski, research director at Gartner Institute in Eden Prairie, Minn.

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ABC ABP

FRANK HAYES/FRANKLY SPEAKING

Hasso responds

THE GOOD NEWS: Hasso Plattner isn't a jerk. SAP's head honcho knows there are real problems in too many ERP installations. He says he's committed to making all his customers successful and putting the kibosh on the ERP blame game. "We have to be part of the team," Plattner told me after I strafed him for finger-pointing in my Nov. 15 column. "These systems aren't allowed to fail."

Of course, those are the right words, the politically correct words, to say. But I think Plattner means them.

The bad news: The problems are real. Plattner himself told me horror stories of planes grounded and trucks idled at loading docks because of ERP problems. Some problems were caused just by bad choices in configuring software switches. In one case, a huge warehouse operation was brought to its knees by a single parameter, combined with users doing something reasonable but unexpected.

Readers weighed in with their own bad news about SAP's and other vendors' attitudes. A CIO wrote, "We are live on SAP, yet the pain was and is great." An IT director said, "No matter what part of the system we worked on, the [vendor's] tech would tell us, 'Oh yes, that's the problem. It's the part of the system you implemented.'" Another IT director talked about vendors' "egotistical, Jonestown mentality — do it our way or else."

Those harsh words display the ugly gap between promises and reality. For ERP projects — hugely complex, horrifyingly risky and critically important — that gap must be closed.

For the record, Plattner said he wasn't trying to shove blame for problems with SAP R/3 projects off on customers or partners. He doesn't really think anti-German sentiment is a big problem for SAP. And he plans to respond to my column soon with one of his own in *Computerworld*.

More important, Plattner told me he now believes everyone involved in an ERP project has to communicate from Day 1. SAP, systems integrators, business consultants, other vendors, the IT shop — they all have to be electronically linked to make sure the business plan, the users' needs and the operational and technical information are all in the hands of the people who need it, when they need it, so they can respond in Internet time.

He said that's what MySAP.com is supposed to be — not just a portal we've all dismissed as another my-dot-com gimmick, but a way to make that communication happen.

I think we've got to hold him to that. We've got to demand that Plattner deliver on that promise. We've got to demand the same thing of integrators, consultants and other vendors. We can't afford walls between our IT suppliers, or between them and us, just as we can't afford walls between IT and users any longer. From now on, if they won't work closely with our partners — even their competitors — they don't get our money.

> *SAP's boss now says everyone in an ERP project has to communicate.*

We can't afford to simply trust that everyone will get it right. If something doesn't work the way we need it to work, we've got to raise the ante — and fast. Our CIOs and CEOs have to be willing to raise hell to get immediate results. They've got to hold vendors' and consultants' feet to the fire. With millions of dollars in business — *our* business — at stake, patience is a luxury we can no longer afford.

It's a whole different world from the one we put up with today. But it's the world we've got to have.

Good intentions, the right words, are a start. Now we've got to make sure Plattner and his partners — and his competitors, too — deliver on those words.

Because we can't afford any more bad news.

Hayes, Computerworld's staff columnist, has covered IT for 20 years. His e-mail address is frank_hayes@computerworld.com.

SHARK TANK

SO THIS WELL-KNOWN Y2K expert gets hired by the Information Technology Association of America to help set up the White House "situation room" – $40 million worth of Y2K Command Central. Pretty soon, though, trouble: The vendor-dominated ITAA is trying hard to limit business's Y2K liability. The guru is not. And he's not bashful about saying so. Result: Money talks, guru walks. He's now off the ITAA payroll.

THIS CFO just made a pilot fish "order him $4,500 worth of notebook (complete with . . . the leather carrying case upgrade, because it is more fitting for someone of his stature!)." Same bean counter refuses to upgrade other execs' PCs. They slog away at Pentium 133s – even the CEO, who keeps crashing. Dr. Sharky prescribes an anonymous note to the CEO, with that $4,500 receipt attached. Stat.

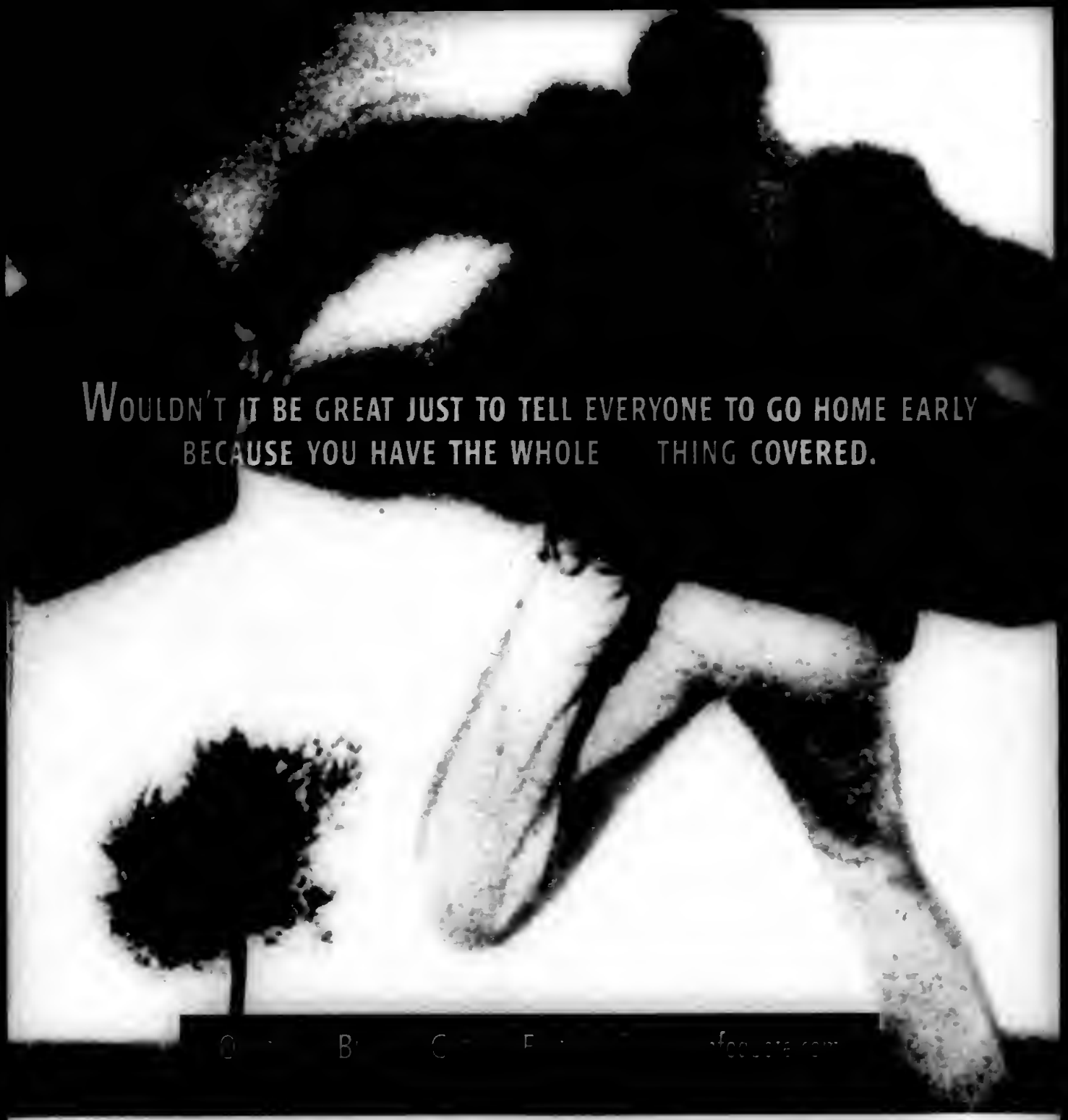
A GUY AMBLES up to True Software's HQ in Waltham, Mass. Note on the front door of the change-management tool company says the premises have been vacated by court order. Sharky's Law: It's almost never a good sign when your vendor gets evicted. (Former) True users should know the company's now part of McCabe & Associates, its answering machine says. But last time Sharky looked, *truesoft.com* didn't say anything about the belly flop.

THE DAILY SHARK (Seen it? *www.computerworld.com/sharky*) asked for Tankster reviews of NBC's recent Y2K disaster movie. Executive summary: Thumbs down. One group of "software geeks in Dallas" who were hoping for a *good* cheesy, made-for-TV movie said they got a bad one instead. Dialogue sample: "The sensors must be reporting the wrong date!" Dallas reaction: "Duh!" Another pilot fish who does Y2K compliance work at a large hospital howled when a "brilliant" doc used a stethoscope to deduce that a fetal heart monitor was Y2Kaput. Last word from Tankster John: "I just hope the Y2K consultants for the movie aren't the same ones fixing the real problems."

The Shark knows everybody's hunkered down in Y2K mode. But keep shoveling that dirt, gossip and rumor to **sharky@computerworld.com**. There's a T-shirt in it for you.

The 5th Wave

"Great! It comes with Quicken. Now maybe we can figure out where all the money around here is going."



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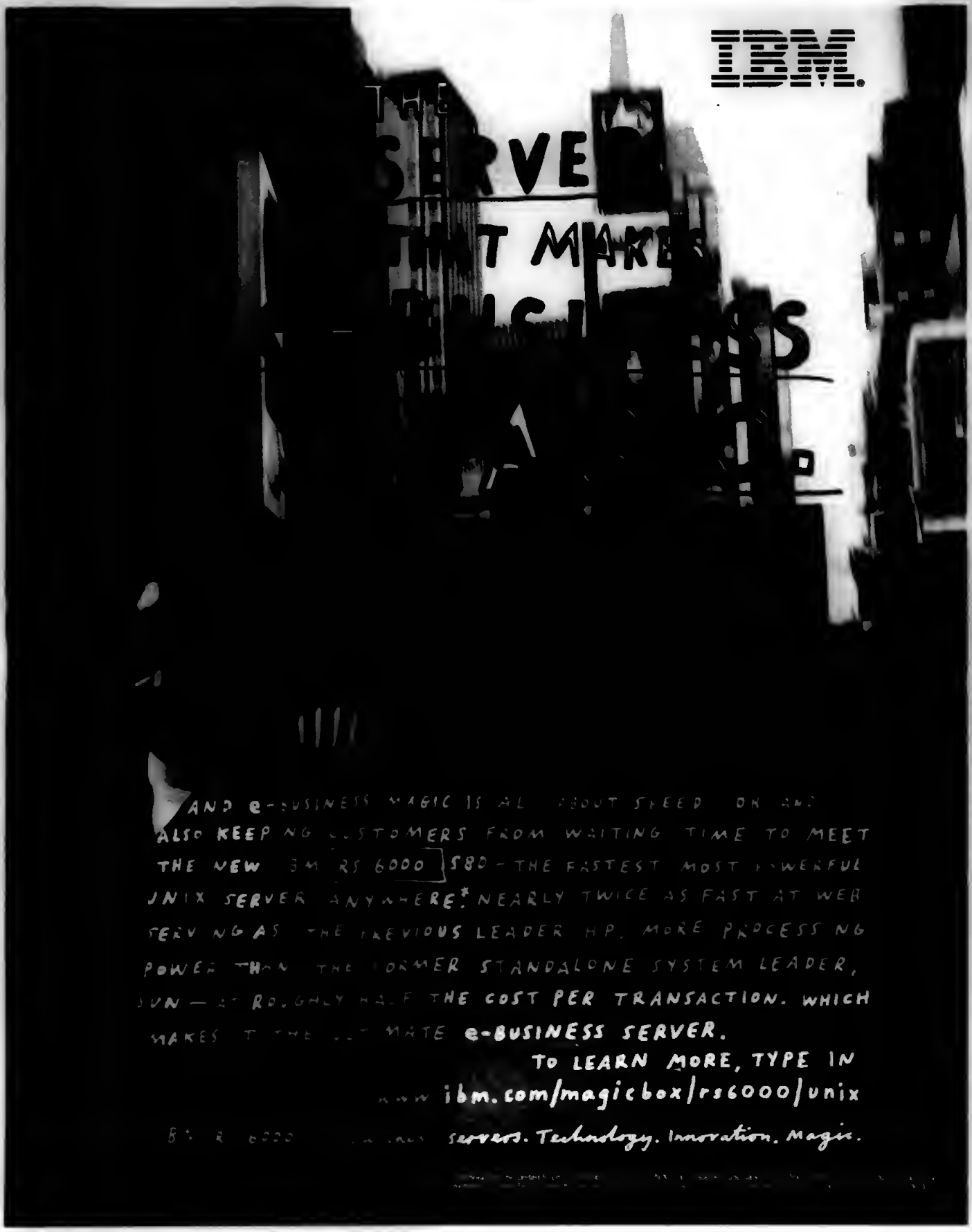
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